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JULY 15, 1999
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Wired BOSSSES

When CEOs get IT,
business alignment
becomes a reality

Page 38

Nader Darethshori, chairman, president
and CEO of publisher Houghton Mifflin: IT
leadership means constant experimentation
followed by aggressive exploitation



How CAN I GET ALL THIS WORKING FASTER,

Comparison made on a Meta Group Study, "SAP R/3 on Open Platforms - Real Cost of Ownership and Implementation Time Study - Small & Medium-Sized Companies" © 1998. **0% - Financing - Financing as low as 0% until the Year 2000 - Qualifying customers pay no interest until the Year 2000 when installing a new AS/400e server or upgrade before June 30, 1999. IBM Global Financing offers financing to qualified commercial and state and local government customers in the United States through IBM Credit Corporation and to qualified commercial and government customers in Canada through IBM Canada Financing. 0% applies to best-credit customers, 24 to 36 months, full-pay-out term. Other rates are based on customer credit rating, financing term and options may vary by country. Published offers are subject to change, extension or withdrawal without notice, and are subject to customer credit approval. Other restrictions may apply. IBM Canada Financing is a division of IBM Canada Ltd. AS/400, AS/400e, e-business, IBM logos and The engines of e-business are trademarks or registered trademarks of IBM Corporation in the U.S. and/or other countries. Microsoft, Windows and NT are registered trademarks of Microsoft Corporation in the U.S. and/or other countries. UNIX is a registered trademark of the Open Group in the U.S. and/or other countries. © 1999 IBM Corporation



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Enterprise

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By Perry Glasser



ON THE COVER

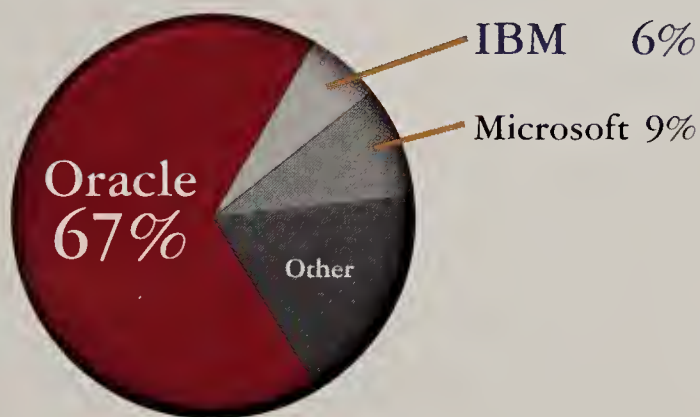
Nader Darehshori makes sure IT investments are made by the book at Houghton Mifflin.

Cover photo by Fernald/Gray

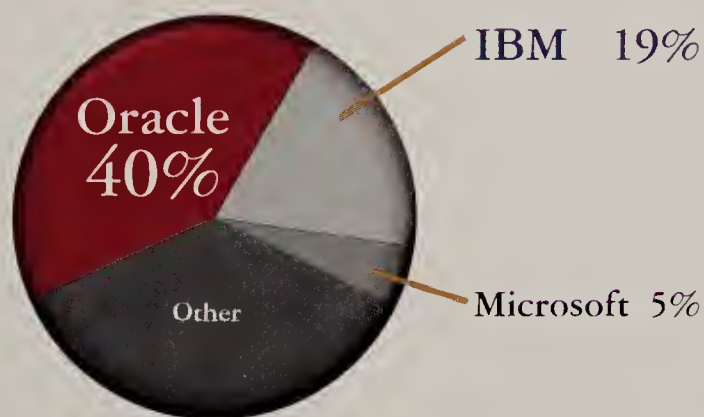


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YOU MAKE EACH ONE FEEL

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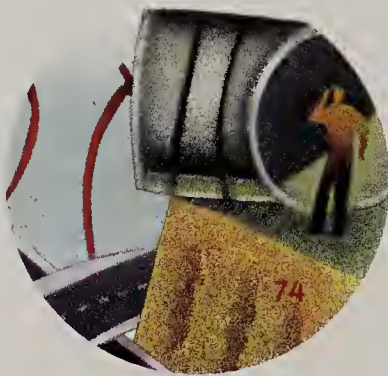
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COVER STORY: SECURITY Is IT safe? Probably not. Why? Because the most sophisticated, technologically advanced security system in the world cannot protect your company's data if the people in your organization won't use it.

PARTNERSHIPS CIOs increasingly are relying on a single PC vendor to reduce costs and complexity. But as in any exclusive relationship, both sides need to make some concessions.

SYSTEMS INTEGRATION Confused? Losing things? Having difficulty communicating? Those are all symptoms of what's become an epidemic in the health-care industry. The Internet may be a cure.

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MOBILIZATION CaliMed's CIO has hit a wall in executing his turnaround strategies. What's he missing?

EXECUTIVE COUNSEL Rudy Giuliani's CIO oversees the core of the Big Apple.

SHOP TALK Baxter CardioVascular Group's Harvey Cabrera discusses installing ERP software.

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—Yankee Group/Upside Magazine, FEBRUARY 1999

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Re: Jargon's Dark Side

NEW LABELS ARE ESSENTIAL to new ways of thinking—who ever spoke of quantum leaps before Max Planck's ruminations on light and heat? Every field has its shorthand, and it's indispensable for expeditious communication. How tedious if Planck had to describe his electrons' incongruous nonlinear change in energy every time he discussed the matter. But labels can lead you astray, especially when the meaning of the shorthand gets lost.

We editors drive writers crazy with our constant red pen circling of typical industry jargon and our insistent demands of "What does that mean?"

In Senior Writer Perry Glasser's story, "Beauty in the Eye of the Stakeholder," Page 58, he outlines principles and actions of value-based management (VBM). Surely no one could doubt a virtuous-sounding practice like that. But working closely on the story made me wonder. Any legitimate business tries to keep its stakeholders happy, right? That seems to be part of the deal in capitalism. Perhaps the fancy terminology simply masks a greater degree of ruthlessness.

Frankly, the terminology is a little disturbing. Value-based management reminds me eerily of the phrase collateral damage, Pentagon-speak for civilian casualties.

As Glasser writes, "Decisions about business are inevitably decisions about people."

Indeed, both business and war, though for some purposes boiled down to numbers on a page, are human endeavors. Handy terms like VBM and collateral damage can remove the people from the picture and make what's otherwise unpalatable—be it job cuts in business or shattered neighborhoods in war—somewhat easier to swallow. Individual losses may be inevitable in the pursuit of the greater good, but human costs should not be camouflaged. Although the need for shorthand persists, sterile language removes the lives of individuals from the story of a company.

As editors, it's our job to not just accept the words as they're given to us. I hope that in other businesses people fill the role of questioner, albeit with different titles and not so many red pens.

Sandy Kendall

Sandy Kendall
Features Editor
skendall@cio.com

PHOTO BY WEBB CHAPPELL

**Handy terms
like VBM and
collateral damage
can make the
unpalatable
easier to swallow.**



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In My Opinion

JUST WHEN I THOUGHT I COULD stop worrying about Y2K and its effect on the global business ecosystem, Intel Corp. warns that apparent lagging efforts by Japan's public utilities to correct year 2000 bugs could snowball into serious disruptions of worldwide PC shipments and, as a result, damage the U.S. economy next year.

That's because a shutdown of Japan's power grid next January could jeopardize supply lines to the PC industry around the world, according to the head of Intel's Y2K projects.

The real problem is that it's impossible to gauge just how great the risk is because there's been no open disclosure of information. It has been difficult to obtain any information about Y2K compliance from Japanese electric and telecommunication companies, water and sewage providers, and other suppliers of critical infrastructure.

If those industries find themselves trying to solve Y2K problems after the fact, there will be serious disruptions to building computer chips, and the entire industry will fall flat on its back.

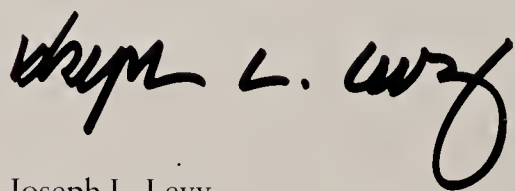
The Japanese attitude is to believe in their efforts and not to ask too many questions. The American way is to trust—but also to verify. That's why we in the United States are perhaps the best prepared to encounter little disruption to our infrastructure.

Intel began auditing its Japanese suppliers last fall and found that only 8 percent were ready for computer problems associated with Y2K. After working with its Japanese vendors to address the problem, approximately 67 percent are now compliant and the rest hopefully will be by the end of 1999.

Intel was not the first outsider to question Japan's Y2K readiness, however. A GartnerGroup Inc. survey rated

Japan on a par with underdeveloped countries like Panama and Pakistan in its preparedness for Y2K.

We must have all countries address the Y2K issue in an open and honest way. The United Nations should provide a worldwide report, country by country, as to the state of each nation's critical infrastructure. Then perhaps by working together we can make Jan. 1, 2000, just like any other day of the year.



Joseph L. Levy
President and CEO, IDG Communications Inc.
jlevy@idg.com

PHOTO BY WEBB CHAPPELL

All countries must address the Y2K issue in an open and honest way.

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Edited by Todd Datz

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Purchasing Cards

Swipe and Slash

PAPER OR PLASTIC: It's not just a consumer's choice at the grocery checkout anymore; it's a corporate matter of reducing operating costs and streamlining businesses. Companies are increasingly using purchasing cards to save time and money on small yet labor-intensive business-to-business transactions. One clean swipe of a card eliminates scads of paperwork resulting from purchase order and invoice forms that need to be filled out by teams of people. According to a survey conducted for Visa USA Inc. by Deloitte & Touche Consulting Group, 18 multinational corporations that have adopted purchasing card programs have reduced their invoice processing costs an average of 73 percent.

Consider Monsanto Co., the St. Louis-based

agro-chemical giant, which is slashing its operating costs faster than it can produce its Roundup Ready Soybeans. The company began rolling out purchasing cards in October 1997 so that employees would spend less time on what **Steven Pennington**, Monsanto's manager of administration and IT purchasing, calls non-value-added activities, like filling out forms and chasing down signatures and approvals.

Currently, 4,600 of Monsanto's 31,800 employees use the card, which works just like a credit card. Employees use it to pay for as many noncapital purchases—for example, conference registration, catering and office supplies—under \$2,500 as possible. Pennington adds that such transactions constitute 60 percent of all of Monsanto's nonraw material purchases and, if the card isn't used, cost the company \$40 to \$45 per transaction. Though Monsanto hasn't yet determined the cost per transaction

Transactional Therapy

Average annual cost to complete a transaction from order placement through control and audit

Before implementing the purchasing card:	After implementing the purchasing card:
\$83.09	\$22.98



Average time required to complete a purchasing card transaction from order placement through control and audit

Before implementing the purchasing card:	After implementing the purchasing card:
54 minutes	14 minutes



SOURCE: "VISA PURCHASING BEST PRACTICES STUDY," CONDUCTED BY DELOITTE & TOUCHE CONSULTING GROUP



In Their Own Words

"Nobody wins if the public freaks out."

—CATHY HOTKA, VICE PRESIDENT OF INFORMATION TECHNOLOGY FOR THE NATIONAL RETAIL FEDERATION, TALKING ABOUT HUMAN BEHAVIOR AND Y2K WITH THE NEW YORK TIMES



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with the card, it does know that the payment process has been streamlined. Employees no longer need busy themselves with such time-consuming tasks as issuing checks and entering invoices into the company's accounts payable system. Cycle time for completing transactions with the purchasing card has been reduced from weeks to days and even minutes in some cases, according to **Dick Schirber**, vice president of marketing communications at U.S. Bank's Interactive Commerce Group, the bank that issues Visa's commercial cards to Monsanto.

Another added benefit: Though not biodegradable, purchasing cards generate less waste than the traditional method of reconciling purchases. That may make companies awash in paper-based transactions green with envy.

—Meridith Levinson

Document Management

Chasing Paper

PERHAPS A FEW COMPANIES have managed to achieve a paperless office environment, but most of us are just as addicted to the pulpy, white stuff as we were 10 years ago. According to the Washington, D.C.-based American Forest & Paper Association, U.S. shipments of office paper—for computers, copiers and personal use—climbed 33 percent from 1986 to 1997.

Although technology has not made paper obsolete, it is providing companies with better ways to control and direct the flow of paperwork. Dazel Corp., a wholly owned subsidiary of Hewlett-Packard Co. based in Austin, Tex., offers the Dazel Output Management System, a suite of products designed to provide reliable document delivery across the enterprise. It does so in a variety of formats: print, fax, electronic file, e-mail and Web. Let's say you wanted to send a dozen copies of a report to a company in Hong Kong. Traditionally,



you would print copies, collate and bind them, and then send the reports by an air delivery service, where you run the risk that they will be delayed or even lost. With Dazel's product, you can send the reports to each individual in the format they choose with the click of a button: One person may want the report sent via e-mail to her PC, another to the workgroup printer at her office. Perhaps the system's most valuable function is that it allows companies to track and trace the flow of paperwork.

When SAP R/3 went live at Hill's Pet Nutrition Inc. in Topeka, Kan., in October 1996, the goal was to foster better and more timely information sharing in the production, sales and forecasting groups. But Hill's found that the pick lists that indicate the amount and destination of each product weren't going to the right printers at the warehouses—trucks were pulling up at the warehouses with no idea of what they were picking up, where the products should go and in what order. To solve the problem, Hill's implemented Dazel's R/3 output product. The product allowed Hill's to remotely control the print output at its 350 warehouse locations, which ensured that the invoices, packing slips and freight bills would all be in the right place at the right time.

Dazel President **William Bock** sees the progression toward the electronic information delivery as inevitable. "E-mail and Web delivery of information are a tremendous strategic advantage for companies," Bock points out.

—Daintry Duffy

Salary Information

Zone Press

IF YOU'RE ONE OF THE ZILLIONS OF PEOPLE WHO DOESN'T THINK YOU MAKE what you deserve, then the Institute of Management & Administration (IOMA) in New York City has got a Web site for you. Called the Salary Zone, the site is a resource for employees who want to find out what they're worth and for HR managers who desire detailed backup before making a salary offer. Individuals fill out an online form with specific information, such as job title, responsibilities and expertise level, and IOMA's researchers provide a benchmark salary figure for the position based on the company size, location and what industry it's in. IOMA President **David Foster** says the company makes a point to gather information beyond the traditional job description. And if it feels it doesn't have enough information, it'll contact you to get more. Reports are analyzed and completed within five business days and cost \$50. For more information, check out www.ioma.com/zone.

—Lynne Zouranjian

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Chaos Theory

Ground Control to Major Tom

YOU'RE IN CHARGE OF LIFE SUPPORT ON A SPACE SHUTTLE mission. Your mission is to launch a probe into the heart of Haley's Comet. Suddenly your console blinks more red lights than there are brake lights on the Santa Monica freeway at rush hour. What do you do now, commander?

This simulated space mission comes courtesy of Tampa, Fla.-based Direction Consulting Inc. in partnership with the Tampa's Museum of Science and Industry. Its half-day program is called "Experience Chaos: The Power of Discovery" and is conducted at different Challenger space shuttle simulators around the country. The program is based on chaos theory, a science-based theory that says what appears to be disordered in nature is actually very ordered, and vice versa. By throwing executives at the controls of a shuttle, they learn to adapt to fast-changing conditions. Crews of executives are evenly divided at two sets of workstations—one set aboard the Challenger and a shadow set at Mission Control. When the situation goes kablooey on either life support or communications, simulation members must figure things out—and fast, just as executives leading companies must continually adapt to unpredictable conditions. **Patrick Slevin**, a spokesperson for Direction says, "We teach leaders to look at uncertainty and see that as opportunity."

Executives at Florida Power and Light and management faculty at the University of Southern Florida are among the clients that have signed aboard for a day in space. The program requires a minimum of 12 people and costs about \$250 per person. For more information, call Direction Consulting at 877 XP-CHAOS. ■

Workplace Communication

Corporate Gabmeisters

IT DOESN'T TAKE A ROCKET SCIENTIST TO figure out that many employees use their e-mail at work for personal reasons. Whether it's a quick e-mail to mom on her birthday or a note to the golfing foursome telling them the tee time for Saturday, e-mail is surpassing the telephone as the most widely used workplace communications tool.

But according to a 1999 survey on e-mail abuse by Elron Software Inc. in Cambridge, Mass., a maker of software monitoring tools, e-mail is entering areas that are entirely inappropriate for the office and troublesome for the boardroom. While 85 percent of the 805 respondents to the survey admitted that they send or receive personal e-mail at work, a whopping 64 percent of them said that those packets of digital correspondence also contain sexual, racist or otherwise offensive content. But it doesn't stop at that. Executives might be alarmed to hear what else employees are sending out (see "Show and Tell" below).

and Tell

Show

Percentage of employees who admit to using e-mail to

Share business information **20.6%**

Share financial information **21.5%**

Share new product launch information **31.6%**

SOURCE: ELRON SOFTWARE INC., 1999

Interestingly, just over 60 percent of employees also said that they weren't aware of any e-mail tracking system at their companies, while the remaining 40 percent knew that their organization monitored their e-mails but were still sending them anyway. Big Brother may be watching, but it appears not too many people are noticing. ■

ILLUSTRATION BY MARC ROSENTHAL

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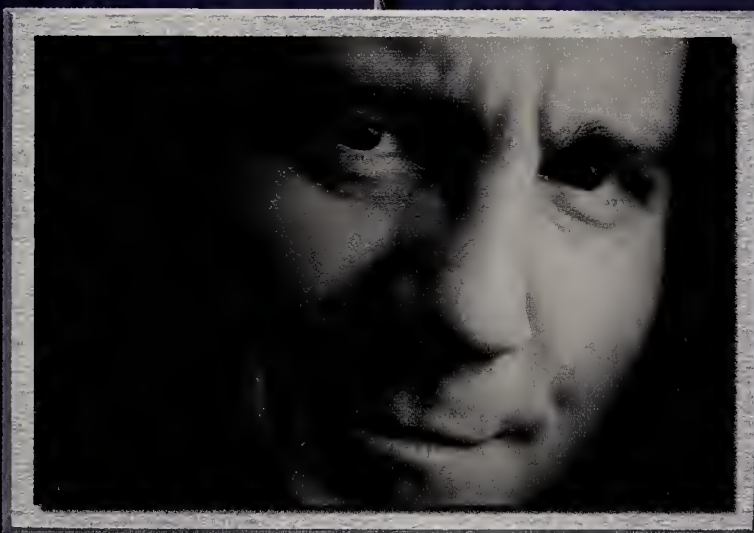
same time. In fact, Sequent's Intel® processor-based NUMACenter™ was designed to run both UNIX and NT and has the system management capabilities to provide a complete data center

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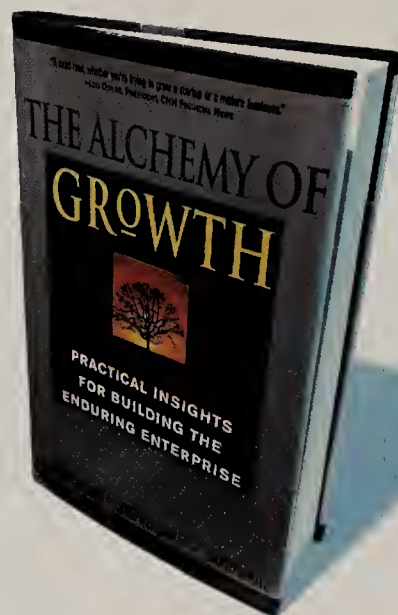
Midas Touch?

The Alchemy of Growth: Practical Insights for Building the Enduring Enterprise

By Mehrdad Baghai, Stephen Coley and David White
Perseus Books, 1999, \$27.50

JUST AS ALCHEMISTS OF OLD DEVOTED THEIR lives to unlocking the secrets of the ancients and turning lead to gold, many companies are constantly searching for the elusive secrets to creating sustained growth. This book doesn't claim to be the philosophers' stone or promise organizational immortality, but it does take a comprehensive and methodical look at how to achieve and sustain above-average enterprisewide growth. Described by the authors—all consultants at McKinsey & Co. Inc.—as a growth journey for leaders and companies, the book is the result of an exhaustive three-year study. Researchers surveyed companies of all sizes and from many different industries, outlining the results through a series of engaging case studies.

The authors' basic formula for growth has three steps, or horizons: The first horizon involves extending and defending the core business, the second entails building emerging businesses and the third includes creating viable options for the future. All three of these horizons must be achieved and sustained for the formula to work. Cited as a company that has achieved



all three horizons is The Charles Schwab Corp., which began as a full-service stock brokerage in the 1970s and is still growing rapidly (Horizon 1). To complement this core business, Schwab branched out into mutual funds

in the 1980s (Horizon 2), and in the 1990s piloted a life insurance program while going gangbusters into online trading (Horizon 3).

Canadian manufacturer Bombardier is cited by the authors as a company that has diversified its offerings and reached the third horizon. Bombardier began manufacturing snowmobiles in 1942. Since then, it has added airplanes and watercraft to its product line, opened a financing and leasing business in niche markets where it has product knowledge and started a servicing business for maintaining and repairing aircraft.

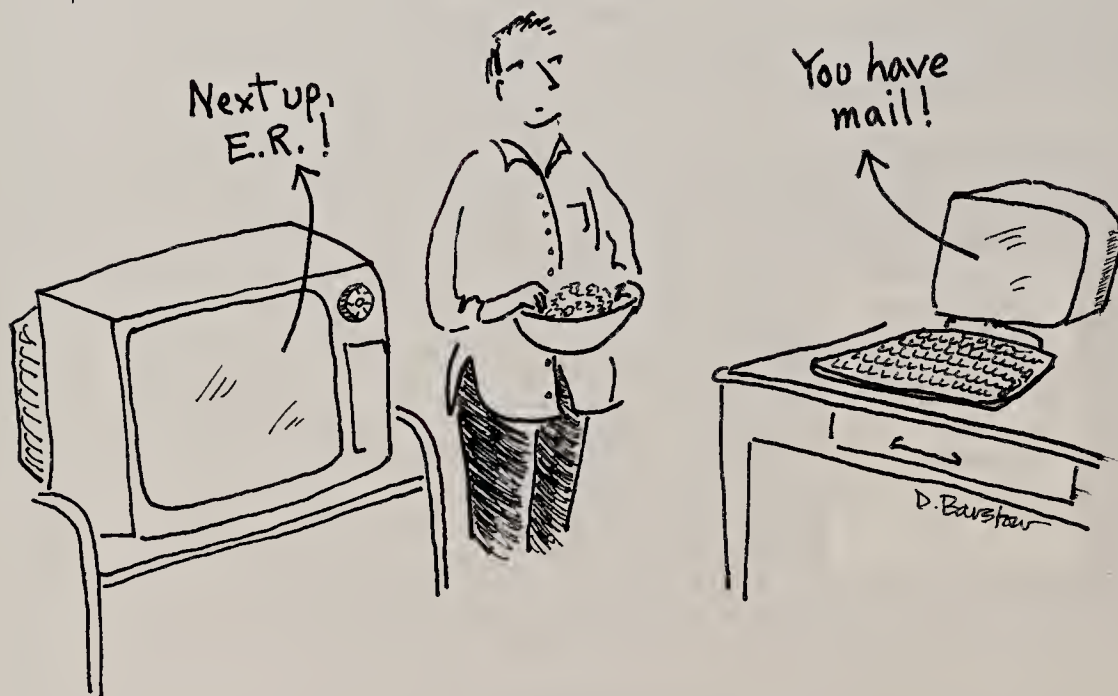
The final sections of the book include a further series of case studies designed to help leaders take practical steps toward achieving growth in their enterprise. Harnessing enthusiasm to create new business potential is one of the core elements to growth. Everything from a backyard BBQ to entirely restructuring management is suggested for generating enthusiasm. The executives of Kyocera, a Japanese-based ceramics company, traveled to a guest house in Kyoto

every weekend for six months to "plan, dream, reflect and argue" as they considered expanding into telecommunications, a venture that has proved to be successful. If this is a bit extreme, one could take the path of a company like GE Capital, which created several small operating units with decentralized leadership. This reorganization fostered a feeling of community among its employees and gave them a greater personal investment in the business, which helped generate new levels of creative enthusiasm.

The horizons described in the book are neither quick nor easy to achieve and involve a deep commitment from all levels as well as constant attention. But the authors do a good job of laying out a solid formula to help you work some enterprisewide magic of your own. If you've been feeling like your organization's luster has dulled, this book might help give you the golden touch.

—Stacy Hague

Comic Relief



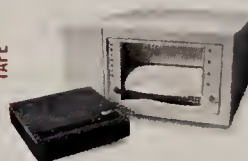
Torn between two lovers



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Arranged Marriage

If you're headed for a merger or acquisition, don't leave cultural issues out of the proposal

BY MEGAN SANTOSUS

MANY COMPANIES AVER THAT THE MOST expedient path to bigger market share or an expanded product portfolio is through a merger or acquisition. Some statistics courtesy of Right Management Consultants Inc. in Philadelphia reveal the prevalence of the M&A trend: In 1998, some 7,700 mergers valued at \$1.2 billion occurred in the United States; worldwide, 23,000 corporate marriages totaled more than \$2.4 trillion in value.

Before companies make any legal agreement to join up, they compare balance sheets, evaluate marketing strategies and identify operational redundancies (see "Secrets of the Merger Monsters," CIO Section 2, April 15, 1999). They may go through gyrations to appease shareholders or to get a thumbs-up from the Federal Trade Commission or another appropriate regulatory agency.

But all too often companies neglect to evaluate corporate cultures—a synergistic element at least as important as the financials—until well after the ink is dry on the binding agreement. Let's get the numbers and marketing pitch in sync, the prevailing sentiment goes, and worry about the people part later. "There's just not a lot of due diligence done on cultural issues," says Paul Wesman, director of corporate communications at Right Management, a phenomenon he clearly views as a serious misstep.

Ignoring the so-called soft stuff upfront has a nasty habit of creating problems down the road. In a survey of 179 newly merged organizations, Right Management found that only 30 percent of respondents feel their companies have successfully integrated cultures following the merger. For the 70 percent that haven't done such a great job, the fallout can be mettlesome. Nothing subverts the promise of a strategic merger like plummeting morale, high turnover and an inability to attract

top executives. One of the most notorious cultural mismatches occurred in 1994 when Quaker Oats Co. acquired Snapple; after three years of marketing and distribution clashes, Quaker ditched Snapple and took a \$1.4 billion write-off.

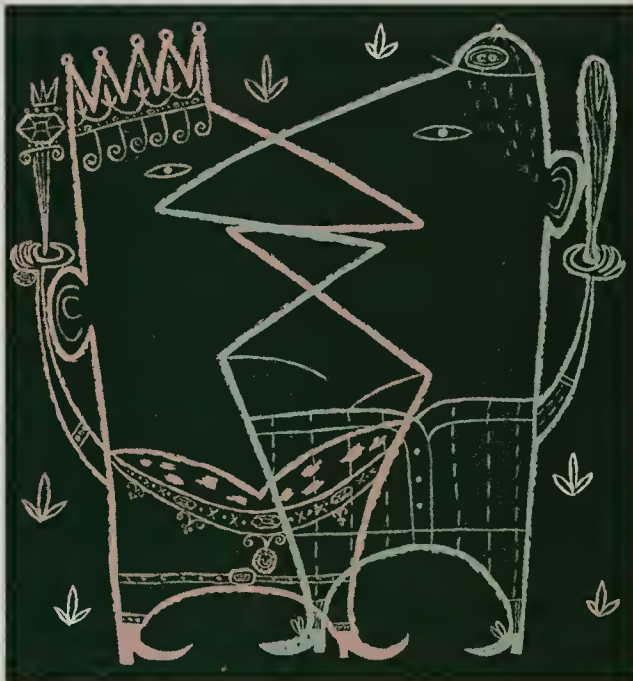
The idea that culture is important shouldn't be news to any executive. (All those reengineering projects didn't fail because of bad karma alone.) So why do so many M&As proceed without so much as a nod to the cultural implications? Because business is still grounded in numbers that can be quantified and strategies that translate nicely into soundbites. Culture is ambiguous, amorphous, often messy. And the way we describe

organizational culture doesn't get to the heart of the matter. One company is team-oriented. Another thrives on hierarchical command-and-control. One company is results-oriented, while another is process-oriented. How those descriptions translate into employee conduct and morale remains a mystery to most people.

But it's time for executives to evaluate corporate culture at the same time they take a fine-toothed comb to the balance sheet. Mark D. Arian, leader of the mergers and acquisition practice at Hewitt Associates LLC in Bridgewater, N.J., notes that certain cultural data points can indeed be evaluated with the exactitude of a hard science. A look at the leadership

hierarchy, reporting relationships, compensation plans and benefits policies will go a long way toward informing executives about the nature of a corporate culture. Those are the kinds of issues that deserve a place at the negotiating table. By the time companies are legally entwined, it's too late to start wondering if disparate cultures can be melded into a coherent whole. **CIO**

Senior Editor Megan Santosus can be reached via e-mail at santosus@cio.com.



CIO 100

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AUGUST 15-18, 1999 • AGENDA HIGHLIGHTS

SUNDAY AUGUST 15

Registration

Riverwalk Golf Tournament

Enjoy a round on San Diego's newly redesigned championship golf course.

Café 100 Reception

Meet other participants and Symposium Partners in our informal living room.

MONDAY AUGUST 16

Opening Remarks and KnowPulseSM Poll

Gary Beach

Publisher

CIO magazine

Be sure your views are represented in this groundbreaking poll.

CIO 100 Introduction and Welcome

SYMPOSIUM MODERATORS AND EXPERIENCE LEADERS

Geoffrey Moore

Founder and President

The Chasm Group

Mike Hawley

Dreyfoos Professor of Media Technology

MIT Media Lab

Hawley and Moore will lead participants through a number of different learning experiences.

EXPERIENCE: MARKET ANALYSIS

The Gorilla Game: How to Pick the Winners in High Technology

Geoffrey Moore

Moore will highlight how CIOs can apply the lessons of the financial markets to the challenges of IT purchase decisions.

EXPERIENCE: ACHIEVEMENT

CIO 100 Honoree Presentations

The CIO 100 Special Issue will come to life through discussions with the following CIO 100 Award honorees who will share their winning strategies.

James Donehey

CIO & Senior Vice President

Capital One Financial Corporation

David Drew

Vice President, Information Technology

3M

Ross Holman

Vice President Systems

Southwest Airlines

EXPERIENCE: CEO INSIGHT

Tom Donohue

President & CEO

U.S. Chamber of Commerce

Donohue, as CEO, shares insights on how the Chamber works with the Fortune 1000 on IT issues before Congress.

EXPERIENCE: INDUSTRY BRIEFINGS

The Symposium Partners will lead interactive small group discussions on strategic business and IT issues.

EXPERIENCE: INNOVATION

Mike Vance

Chairman and Co-Founder

Creative Thinking Association of America

Vance will discuss how to develop cultures of continuous innovation and creativity.

Café 100 Reception

"I find no conference more relevant to the challenges I face as a chief information officer than a CIO conference."

Catherine Rodewald, Sr. VP & CIO, Amresco, Inc.

TUESDAY AUGUST 17

EXPERIENCE: EVOLUTION

Mike Hawley

Hawley will envision the next five years of IT evolution and revolution.

EXPERIENCE: LEADERSHIP

Leadership Challenges for the CIO

Warren Bennis

Founding Chairman

Leadership Institute

University of Southern California

Bennis will share his lessons on leadership for CIOs and lead a discussion on the challenges facing them.

LEADERSHIP PANELISTS

Ken Harris

CIO and Vice President

NIKE, Inc.

Chris Hoenig

Former Director

Information Management and Technology

US General Accounting Office

Patricia Wallington

CIO and Corporate Vice President (retired)

Xerox Corporation

EXPERIENCE: INDUSTRY ANALYSIS

Charles Phillips

Managing Director, Enterprise Software

Morgan Stanley Dean Witter

Phillips will engage participants on the shifts taking place in the industry — focusing on ERP and E-commerce.

EXPERIENCE: ROUNDTABLES

Editorial Roundtables

CIO editorial staff will lead breakout discussions on the following topics:

- After Y2K: Mopping Up and Moving On
- Recognizing and Communicating the Value of Your Investments
- The Staffing Crisis: Closing the Gap
- Developing Leaders: How to Identify and Cultivate Leadership in Your Organization
- Why Everyone is So Hot for Knowledge Management
- Success on the Web: How to Know When You've Got It and What to Do When You Haven't...
- Strategic Software Providers: Do They Really Deliver?

Café 100 Reception

CIO 100 Awards Dinner

Celebrate the CIO 100 Award honorees at a black tie reception and dinner featuring Chairman of the Senate Committee on Commerce, Science and Transportation, U.S. Senator **John McCain**.

WEDNESDAY AUGUST 18

KnowPulse Poll Results

Lew McCreary

Editorial Director

CIO magazine

EXPERIENCE: LONGEVITY

Opening your Heart Anatomically, Emotionally and Spiritually

Dean Ornish

Founder, President and Director

Preventive Medicine Research Institute

Dr. Ornish will explore economic and health policy implications for you and your company.

EXPERIENCE: GLOBAL ECONOMY

The Economic Consequences of the Y2K Problem

Ed Yardeni

Chief Economist and Managing Director

Deutsche Bank Securities

Yardeni will assess the likely impact of Y2K on our organizations and the economy.

Summary and Closing Remarks

Geoff Moore

Mike Hawley



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☐ **\$2,895 — Government/Military**

This fee includes your hotel for three nights. CIO will make your hotel reservations for arrival Sunday, August 15 and departure Wednesday, August 18. Additional hotel reservations are your responsibility.

☐ **\$325 — Companion Program**

This fee includes all scheduled meals, receptions and entertainment, companion breakfast, a Yoga/Tai Chi class, afternoon tour and the CIO 100 Awards Ceremony. Companions may not participate in the golf tournament or Symposium sessions. Companions must be enrolled in this program to attend any Symposium function.

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All fees must be paid prior to the Symposium, and all cancellations and changes must be made in writing. You may cancel your Symposium attendance up to July 16, 1999 without penalty. A \$250 administration fee will be imposed for cancellations received between July 17 - July 30, 1999. No refund or credit will be given for cancellations received after July 30, 1999 or for no-shows. CIO reserves the right to limit attendance to practitioners and Partner organizations.

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USAA's Edwin Rosane

The first in a series of occasional conversations with non-IS senior executives about strategic technology and their businesses

CIO Enterprise sat down with Retired Col. Edwin L. Rosane, president and CEO of USAA Life Insurance Co. in San Antonio, Texas.

CIO Enterprise: What was the "Ah-ha!" moment for you regarding the strategic importance of technology? When I first took over USAA Life in 1990, we wanted to create a brand-new, whole-life product. As we did research on this new idea, we discovered that the system's cost was prohibitive—it wasn't financially viable to build the product at all. That really brought home to me how important it is to have systems that let you create and market new products fast, particularly since people want things more quickly these days. The final story here is that we went out and built a new system that lets us add new products without even having to call in the IS department.

Do you think most non-IS executives get it?

I'm not trying to be mean, but at many companies there are a lot of folks high up who'd just as soon not think about systems and all the joys and worries that come with that responsibility. I think that's a mistake. Senior executives ought to be up to their eyeballs in tech-

nology. They need to make sure that IS is doing what the business needs it to do. Before you spend money it's important to know what technology can and cannot do so you're not wasting a lot of money and time sending people out trying to do the impossible.

Where are you on the implementation curve of new technology?

I like to be on the leading edge of the second wave. I like to let other companies discover what new technology can and can't do and then take advantage of what they've learned.

How do you keep up with changes in technology?

I have a leg up here because back in 1971 or 1972 the Air Force decided I ought to go back to school, and I got specialized training in computer science. It's helped me understand the lexicon. I don't know how to program in C++, for example, but if somebody comes and tells me that they lost bits in the bit bucket, I know enough to realize that that's not a viable excuse for not doing what I wanted them to do. I'm lucky because there aren't too many folks in my generation who have that background. Although at this point, my grandkids can run a computer better than I can.

How much do you personally use technology?

I have a PC on my desk, and I use it regularly. My favorite tool on the desktop is Pointcast, which I like because it's a very convenient way of seeing what the markets are doing and what the latest news is. One thing about a PC: It's a great tool, but like anything else, it can be abused. You can waste a lot of time messing around with computers.

—Carol Hildebrand



PHOTO BY WYATT MCSPADEN

e-business

idea - business plan - budget - deadlines - applications - integration - security - access - hosting - scalability - flexibility - sales - profits

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can get to you?

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All Along the WAT

US West's Betsy Bernard, executive vice president for retail markets, and her competitive intelligence unit survey their regional market from all angles.

BY GARY ABRAMSON

CHTOWER

Corporate info-gathering pros reveal some of their favorite techniques

CLAIM-JUMPERS AND CATTLE-rustlers may be things of the past, but danger still lurks in the American West, where a large part of the territory remains up for grabs. Today the classic struggle is played out by Denver-based US West as it fights to fend off competitors angling for a piece of the largest regional telecom market in the country. To defend and expand its stake in this fast-growing market, US West's Betsy Bernard, executive vice president for retail markets, deploys a sharp band of dedicated scouts and is turning the company's entire workforce into a small army of informers, equipped with a battery of technology weapons.

Meanwhile on the East Coast, Metropolitan Life Insurance Co., the New York City-based company better known as Metlife, faces similar challenges. It too must develop and use competitive intelligence tactics to detect

Reader ROI

READ THIS STORY to learn

- > How companies turn competitive intelligence into a strategic weapon
- > Techniques that companies are employing in CI
- > The range of questions CI can help answer

PHOTO BY CHRIS SHINN

COMPETITIVE INTELLIGENCE

competitive threats before they do damage. And it must find the tools to dispense this information quickly and efficiently both to the sales channel and the boardroom. Of course all companies would like to improve their market knowledge. But today markets are becoming harder to know: The speed of technological innovation, the proliferation of start-ups and spinoffs, and lower barriers to market entry have created a more complex competitive landscape.

Executives need to find out more about their competitors and customers and find it out faster than ever before. Some companies may need competitive intelligence (CI) to answer questions about new products that they or their competitors are developing. For others, CI can uncover opportunities and risks regarding mergers and acquisitions—that is, should they acquire a competitor or could they be acquired? For companies operating in regulated industries or dependent on government contracts, the main target of intelligence gathering could be government agencies and competitors' relationships with them. Whatever strategic information a company seeks, it must carefully consider which battery of human and IT-based tools is best suited to its needs.

Keeping Current

Many companies have kept abreast of the market through conversations with customers. But Paradyne Co., a Tampa, Fla.-based manufacturer of telecommunications switching equipment, maintains that new products must be developed so fast in its industry that relying on customers could lead to strategic errors. "You could sit the customer down and ask what to build, but very often there are conflicting notions [from] the customer of what they want," says Mark Housman, Paradyne's vice president of marketing. "[Or] they'll tell you one thing, but then the market moves in a different direction, and you've just spent 2 million bucks building the wrong thing."

To place more informed bets on product development, Housman has developed an informal CI group—approximately 15 people from marketing, sales, product development, product management and the executive team—that blends human and IT-based intelligence gathering. The CI team doesn't hold meetings, but all members keep an eye out for competitive intelligence and regularly bring up the issue at other meetings and report back to Housman.

"CI drives our organization in terms of where it puts capital, what the next generation of product should be like and the direction of our public relations."

—BETSY BERNARD, US WEST

With a virtual CI team instead of a full-time staff, Paradyne's CI efforts rely heavily on the company intranet, combined with a new Web-based commercial service that provides both market analysis and a licensed platform to distribute the intelligence. The service comes from Current Analysis Inc. in Sterling, Va., a research company whose analysts write briefs on events such as corporate mergers, personnel changes or new products. Housman and other marketing and sales staff can search the Current Analysis site for industry-specific news with Current Analysis' interpretation. Paradyne's CI team can also add its own view of this news on a section of the site restricted to Paradyne users (all Current Analysis clients have their own sections), and all this can be e-mailed to sales reps in the field. The CI team also posts its views on particular technologies, competitors or industry developments on Paradyne's own intranet, and e-mail strings typically supplement these formal analyses.

The Challenge of Delivery

The big obstacle to harvesting [CI's] value is distribution: The people who need that stuff are on the front line," says John Carosella, vice president of business development marketing for Nokia's IP division in Mountain View, Calif. "It doesn't help for marketing to have [the information] as much as for the sales guy who walks into the customer on a Tuesday afternoon, and the first thing the customer says is, 'What are you going to do about the competitor's XYZ fabricator reverberator?' and he has no idea what the customer is talking about. Afterward he gets on the phone to marketing and says, 'You lazy slugs, didn't you get a report from Gartner?' And they did, but there was no timely way [to deliver it]." It isn't practical for the marketing department to fax the Gartner report to every sales rep, Carosella says. And the department needs some time to add its own comments to the report. This dilemma has led Nokia to become a Current Analysis client, too. Nokia uses the

analysis to prompt its sales force on how to differentiate its products from those of its competitors.

Cooperation among the sales force is also a critical tool for Nokia's CI, Carosella says. "A lot of times you'll see an e-mail that goes from a sales guy to the whole organization and asks, 'Has anyone sold against XYZ when presenting ABC product,

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TECHNOLOGIES

COMPETITIVE INTELLIGENCE

and how did you beat them?' This is where team play comes home. [Other salespeople] will always respond. One may say we saw them three months ago, and they were giving extra discount points or tying it to something else, and that's the way the tactical competitive intelligence gets circulated."

Benchmarks and Legwork

In some industries, a company can find out how it stacks up against its competitors through voluntary industrywide benchmarking. Pam Schulz, a former vice president of marketing at Rubbermaid Inc., and now an independent CI consultant in Los Angeles, says she has used benchmarking data compiled by various industry organizations, such as the semiconductor industry's book-to-bill ratio. But sometimes benchmarking data is not available, and there simply is no replacing shoe leather as the main CI tool, Schulz says.

One client, an Asian computer monitor manufacturer wanted to enter the U.S. retail market. Schulz saw that the retail market leader in monitors had basically come from nowhere and in the space of two or

three years had dominated. The company was privately held and new; therefore little published information was available. However, the competitor was selling in large retail stores such as CompUSA, Circuit City and Best Buy, so it was easy to visit stores and talk to salespeople and store managers. From conversations with distributors, Schulz could calculate how much the competitor was spending to develop the retail channel, including financial incentives for sales reps who call on resellers. The distributor helped her determine industry benchmarks, Schulz says, "and because of a personal relationship, we were able to get specific information on the market leader."

Another unexpected source for information was a local newspaper that profiled an executive at that company who revealed goals for the coming year. He thought he was speaking only to his local community, so he felt safe giving details that enabled Schulz to figure out the company's cost structure, she says. "We had a series of meetings with [my client's] management where they were dumb-

"I'm taking a look at megatrends that can affect all the business units."

—DOTTIE MOON, CI GROUP LEADER, UNITED TECHNOLOGIES

founded that this was really available, that I could give them an actual line-by-line cost breakdown [of the competitor]." In the end, Schultz recommended her client start with mail-order retailers rather than stores. The monitor manufacturer was successful in that channel and is now making plans to expand into the stores.

Global Trends

For a diversified, international company like United Technologies Corp. (UTC)—which makes Pratt & Whitney jet engines and Carrier air conditioners, among other products—the questions a CI chief must tackle are more and more often global in nature. Although each business unit has long had its own CI function, the Hartford, Conn.-based company has recently added a special CI unit to offer a big-picture perspective. Group leader of that unit Dottie Moon



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says, "I'm taking a look at megatrends that can affect all the business units: the Asian flu, the euro, a new chancellor in Germany, unease in Russia, the emergence of a technology such as the Internet." Moon and one staffer began the new unit in January 1999 within UTC's Research Center, a sort of Bell Labs that monitors and develops technology for the corporation. During the first year, she'll be fostering collaboration among different business units' CI teams so that, for example, one team can track an issue like the Asian economic crisis and share the results with the others.

The CI budget at UTC isn't increasing, but Moon notes, "There's more appreciation among management for the role of CI and the need to integrate it into the planning processes." In some business units, strategic planning supervises the CI team, a development that underscores the new attitude. Besides her megatrends, Moon says that plenty of traditional CI remains to be done. In aerospace, consolidation has reduced the number of competitors, while in the worldwide air-conditioning and ventilation market the challenge is to keep an eye on a growing number of rivals. In either case, "It's a constant watch of what



"It pays to watch not only the products a competitor is selling but also the media channels it is using."

—FLYNT TULLER, DIRECTOR OF CI, METLIFE

they're up to, how they use suppliers, their distribution chains, who their customers are," she explains.

Inquire and Acquire

At United Technologies and other large companies, intelligence gathering may also support an acquisition strategy—for UTC, buying companies that possess complementary technologies. This was the case in the recent purchase of Sundstrand Corp., a Rockford, Ill., maker of aerospace engine controls. It was one of UTC's largest acquisitions in recent years. To begin researching a competitor's technology, "We try to get as much information as possible from public sources," Moon says, such as financial reports, Web site information, patents, market activity and alliances with universities. "We bring that all into our group and evaluate [the competitor's] technology, whether it complements ours, whether we could

improve their technology, whether they seem to be a good value."

But eventually some digging in unconventional sources is required to complete the picture. For example, UTC staff might question a magazine writer about information on the company that didn't make it into an article or staffers might get in contact with potential CI sources from a trade association membership list. They might also interview customers and suppliers of the company in question. Unconventional methods are used in gathering information about scientists who work for a competitor, such as scrutinizing scientific papers or calling foreign embassies in the case of non-U.S. competitors.

Moon says the CI units must adhere to strict legal and ethical codes in gathering and storing information. "We always identify who we are, where we're from and our aim [when we're seeking information]," she adds.

Mirror Images

"It pays to watch not only the products a competitor is selling but also the media channels it is using to project its image and advertise," says

A black and white photograph of an astronaut in a space suit, floating in space. The Earth's horizon is visible in the background, with a bright sun or light source creating a lens flare effect. The astronaut is holding a small electronic device in their gloved hand.

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Flynt Tuller, director of CI for Metlife's institutional business, which markets employee benefits products to businesses. To detect such competitor moves, Tuller's two-person CI unit hires a media-tracking company "that pays a lot of people to watch TV and read the newspaper and enter it into a computer." Though it sounds pretty basic, Tuller says, "We may be able to say, 'Hey, they're planning something big in the San Francisco Bay area,' and we try to preempt them by putting out a letter talking about our strengths in that [product] area without mentioning the competition." Within a week, the CI unit will have crafted a response to the competitor's plan and delivered it to Metlife sales reps to share with the independent brokers. The media trackers also help Metlife benchmark its media presence against competitors: That is, whether it is being outspent in print or TV.

To track daily developments in the industry,

"You can't be in a \$12.5 billion company that has aggressive incursions and not do this."

—BETSY BERNARD, US WEST

Tuller's unit subscribes to the Dow Jones Interactive service and filters its articles into a CI database. The database is accessible to some 800 sales reps. "If something big comes across, like a merger, we would also forward it via e-mail to a specific group of people; at the top we add a summary with implications and comments," Tuller says.

Clinching a sale may depend on a fast response by the CI unit. A sales rep may call CI and say Metlife is a finalist against a competitor. Tuller's unit will immediately search the competitor's Web site and analyst reports and consult industry organizations and trade magazines. If the information can't be found publicly, Metlife may hire small consultancies to make calls about the competitor's products.

An alert from sales reps may trigger another sort of CI mission: crafting a defensive response to a competitor who has gotten the edge. Recently, for example, brokers began asking Metlife reps why the

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company didn't offer certain features in a hot insurance product (which Tuller declined to name because of the ongoing competition). "The question becomes should we offer this other product option and, if so, how?" Tuller says. The possibilities included buying a competitor, developing the product option in-house or adapting Metlife's current product and price. On the basis of CI's research and recommendations, Metlife decided to modify a current insurance product and sell it in a few test markets suggested by the CI unit. To arrive at such recommendations, Tuller's unit draws on both outside consultants and online subscription services that cost Metlife approximately between \$500,000 and \$1 million a year.

The Wild West

US West is easily the largest player in its region's dynamic telecom market, but anything less than a vigorous competitive intelligence network could expose it to serious losses from its more than 200 competitors. "Based on our competitive intelligence, we're in the process of deploying an additional hundred salespeople in specific geographies to go after a very specific set of customers," says Betsy Bernard. Revealing any more detail of this latest market challenge would tip off competitors to this current initiative, she says.

But what she can discuss are US West's tools and methods. "We try to continually educate all our employees about the value of feeding back into our centralized [CI] hotline. Salespeople are pretty good [about calling in] because they're belly to belly with competitors every day; other folks like technicians, you have to encourage to pick up the phone," Bernard explains. Though everyone chips in, the CI unit has some 25 regular staff, including CI scouts throughout the Western region. CI tips are also culled from subscriptions to industry analysts such as GartnerGroup Inc. and Dataquest, and all the information is fed into a CI database maintained

Desktop Tools for CI

Not all the tools for competitive intelligence need be enterprise-based investments

ANYONE INTERESTED IN DOING HIS OR HER OWN hunting and gathering ought to explore the growing number of applications that aid in Web searches and desktop information organizing.

"One incredibly useful way to mine data on the Internet [is to run] software applications that let you store your search criteria and allow you to perform that search repeatedly and often," says independent CI consultant Pam Schulz. "The information on the Net is ephemeral; unless you monitor regularly and formally, you will miss information." Schulz uses Web Record, for example, to run daily searches on the home networking industry. When she finds what she wants, the application prints all relevant pages on the site automatically rather than Schulz having to click through and print manually.

Competitive intelligence staff at some companies face the problem of decentralization. All their sources of potential CI end up stored in a wide range of formats: e-mails, spreadsheets, presentations, Web pages and other documents. Schulz uses Enfish Tracker Pro by Enfish Technology Inc. to build virtual databases on any subject by scanning the entire contents of her desktop—regardless of the application. In fact, when Enfish is installed, it immediately suggests key words for potential database subjects based on an initial, automatic scan of your hard drive.

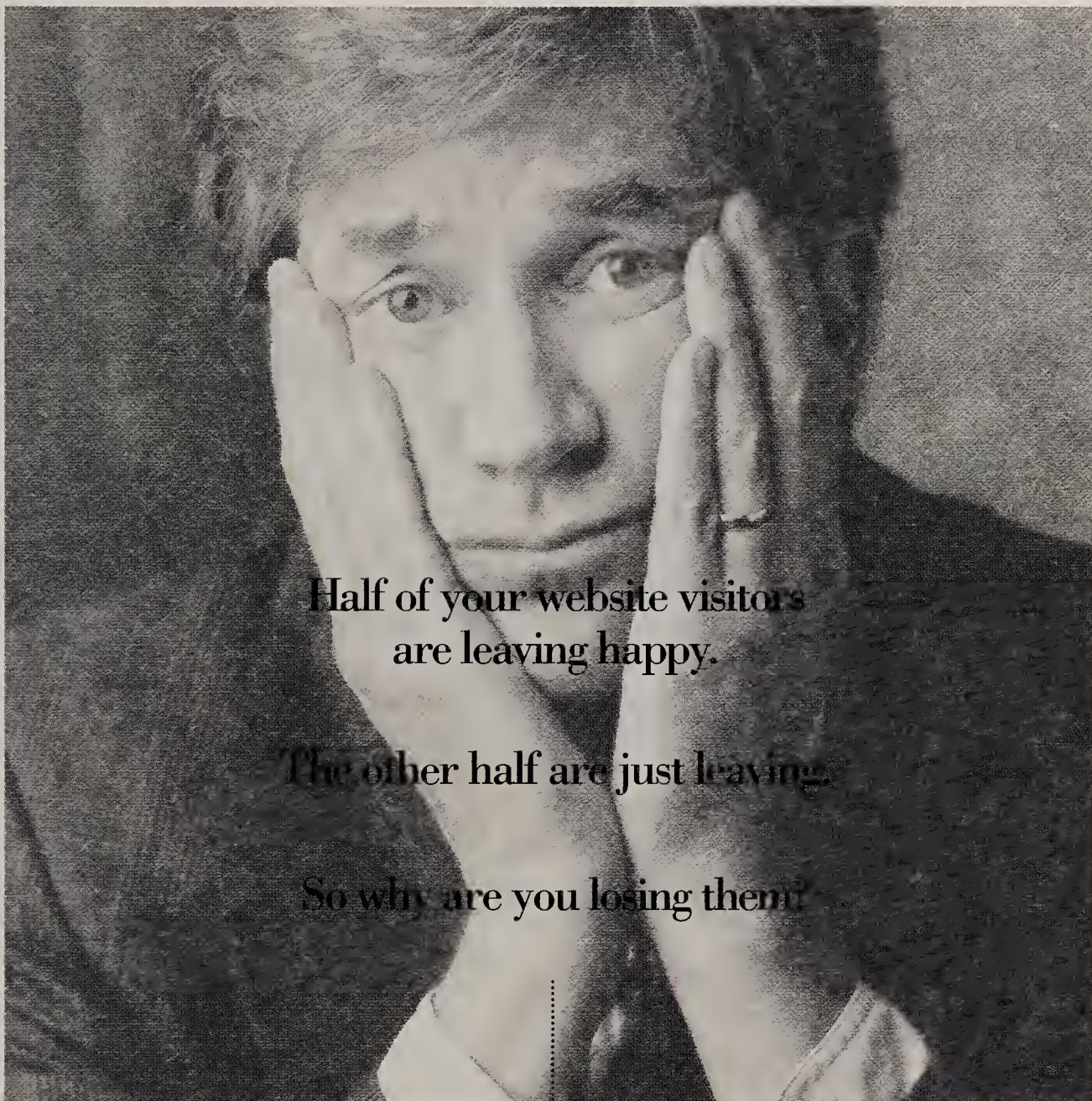
—G. Abramson

by a full-time CI staffer.

"I don't think there's an organization within US West that doesn't take advantage [of CI]," Bernard says. Senior executives all the way up to the CEO ask questions and receive reports by the CI unit. Marketing staff, sales reps and public policy staff often use the CI section of the company's intranet. "If I'm facing a competitor, say, Nextel wireless, I click on Nextel, pull up its product offer and see its functionality, see what our competitive advantage is on that offer," says Bernard. For longer-range planning, an executive can search by industry, product and geography to discover, for example, the latest fiber routes being requested by competitors to gain insight into where the market is going next, she says. "CI drives our organization in terms of where it puts capital, what the next generation of product should be like and the direction of our public relations." In the highly regulated telecom industry, it also influences the company's approaches to regulators. As it petitions the government to allow it to provide long-distance coverage, for instance, US West watches filings being made by competitors at state public utility commissions. (Since this article was written, US West has announced a planned merger with Global Crossing Ltd., a global IP-based fiber-optic network.) The CI unit also monitors help wanted ads that might tip a competitor's hand and subscribes to clipping services that monitor competitors' advertisements to see what markets they are emphasizing or entering.

CI is considered so essential that Bernard doesn't believe in trying to measure its ROI. "For me, CI is a given. I've been in the industry for a long time, and though we fine-tune and adjust on a regular basis, we don't try to do analytics. You can't be in a \$12.5 billion company that has aggressive incursions and not do this." **CIO**

Senior Writer Gary Abramson can be reached at gabramson@cio.com.



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Leadership

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CEOs and Technology

An increasing number of CEOs realize that their relationship with IT doesn't have to be adversarial

chief executives who

When Carl Pascarella was offered the top spot of president and CEO at Visa USA

Inc. in 1993, friends and business associates alike advised him to pass on the prestigious job. They warned that Visa had become complacent in its position as the preeminent credit card company. It had been slow to embrace industry trends like corporate co-branding and was consequently losing mar-

ket share to arch rival MasterCard International Inc. And with the credit card market becoming increasingly saturated, the inside scuttlebutt was that there was nowhere for Visa to go but down.

However, seeing opportunity where others see only obstacles is a trademark of Pascarella's career and character. His 10 years spent heading up Visa's Asia-Pacific operations

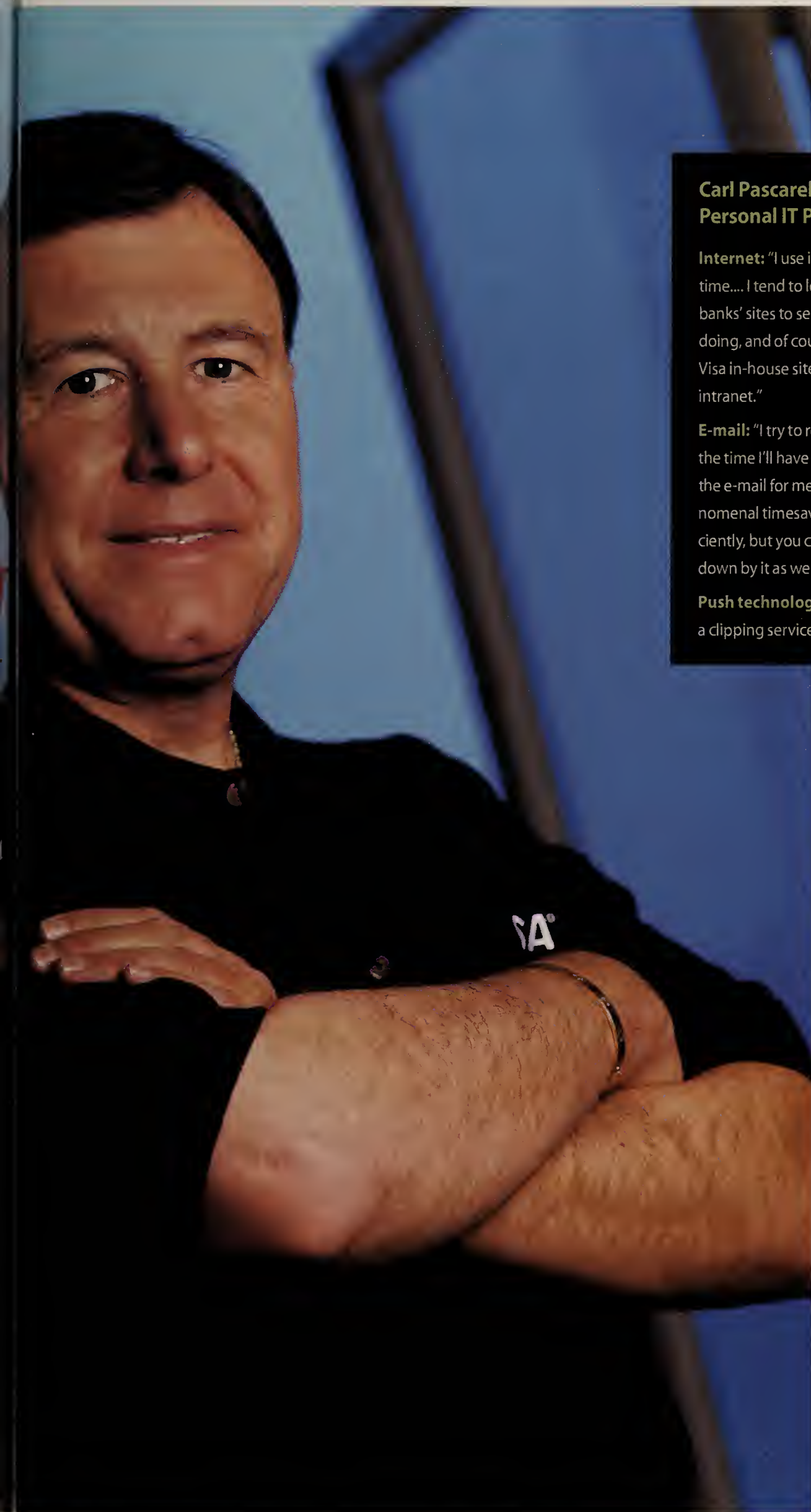
Reader ROI

This feature is part of CIO's Summer Leadership Curriculum, which began with the June 15, 1999, issue.

READ ON TO LEARN

- ▶ Why CEOs forge partnerships between business and IS
- ▶ How CEOs gather information about technology
- ▶ What future technology challenges CEOs face





Carl Pascarella's Personal IT Profile

Internet: "I use it from time to time.... I tend to look at the major banks' sites to see what they're doing, and of course I look at the Visa in-house sites we have on our intranet."

E-mail: "I try to read it, but most of the time I'll have my secretary skim the e-mail for me. I think it's a phenomenal timesaver if used efficiently, but you can get bogged down by it as well."

Push technologies: "No, we have a clipping service that I look at."

had taught him that the strength of Visa's global brand and the company's solid systems infrastructure were unmatched in the marketplace. The challenge for Pascarella was to turn Visa USA's focus back on those two core assets,

and under his watchful eye a reinvigorated Visa has flourished. The number of cards in circulation grew to 322.5 million in 1998 from only 157 million in 1993. And as of 1998 Visa USA's share of the highly competitive credit card market was a whopping 52.8 percent.

Pascarella is one of a growing number of CEOs who appreciate the fundamental importance of information technology to a company's success (see Page 42 for more on Pascarella). As you'll hear from Pascarella and three other CEOs, developing a technology-friendly leadership style doesn't mean learning how to crunch code. In most cases it has more to do with building relationships with other corporate executives, having a strategic view of the role that technology plays in the business and rethinking the role of the CIO.

Nader F. Darehshori Chairman, President & CEO, Houghton Mifflin

Houghton Mifflin Co. is a major educational publisher based in Boston. It produces textbooks, instructional technology and assessments for the elementary, secondary and college markets. In 1998 it had sales of over \$860 million.



As Nader Darehshori likes to tell it, his entrance into the textbook business was, in the beginning, little more than a lifestyle choice. He enjoyed campus life so much at the University of Wisconsin that when he was offered a job in 1966 as a college textbook salesman for Houghton Mifflin he grabbed it. Thirty-three years later, Darehshori sits atop the venerable publishing house and, regardless of how he got into the book business, a love of the written word has kept him there.

Publishing has become increasingly technology-oriented in the past decade, which has motivated Darehshori to keep pace with advances in IT. Enhancements in customer call centers, order entry and automated warehouse distribution systems have improved the customer's experience. On the other side of the seesaw, technology has enabled the company to put out books faster and with less expense, which allows it to update content more frequently.

With eight separate divisions, maintaining the alignment between business and technology is of perennial concern to Darehshori. He encourages each division to take ownership of its technology initiatives. If a business unit wants to implement a new system, it draws up a business plan and brings it to Darehshori and CTO Mark Mooney. The first question that unit executives are likely to hear from the two is, "If you are able to do this, what do you think the business possibilities are four or five years down the road?" Another way that Darehshori fosters business and IT alignment is through the liberal use of pilot programs. "I think the major difference between us and other companies," he says, "is that with almost everything we have done here, we have experimented

in a small way, watched the results and then moved on it aggressively."

Prior to Darehshori's appointment as CEO in 1990, Houghton Mifflin didn't have a CTO. Darehshori views the creation of the executive-level CTO position

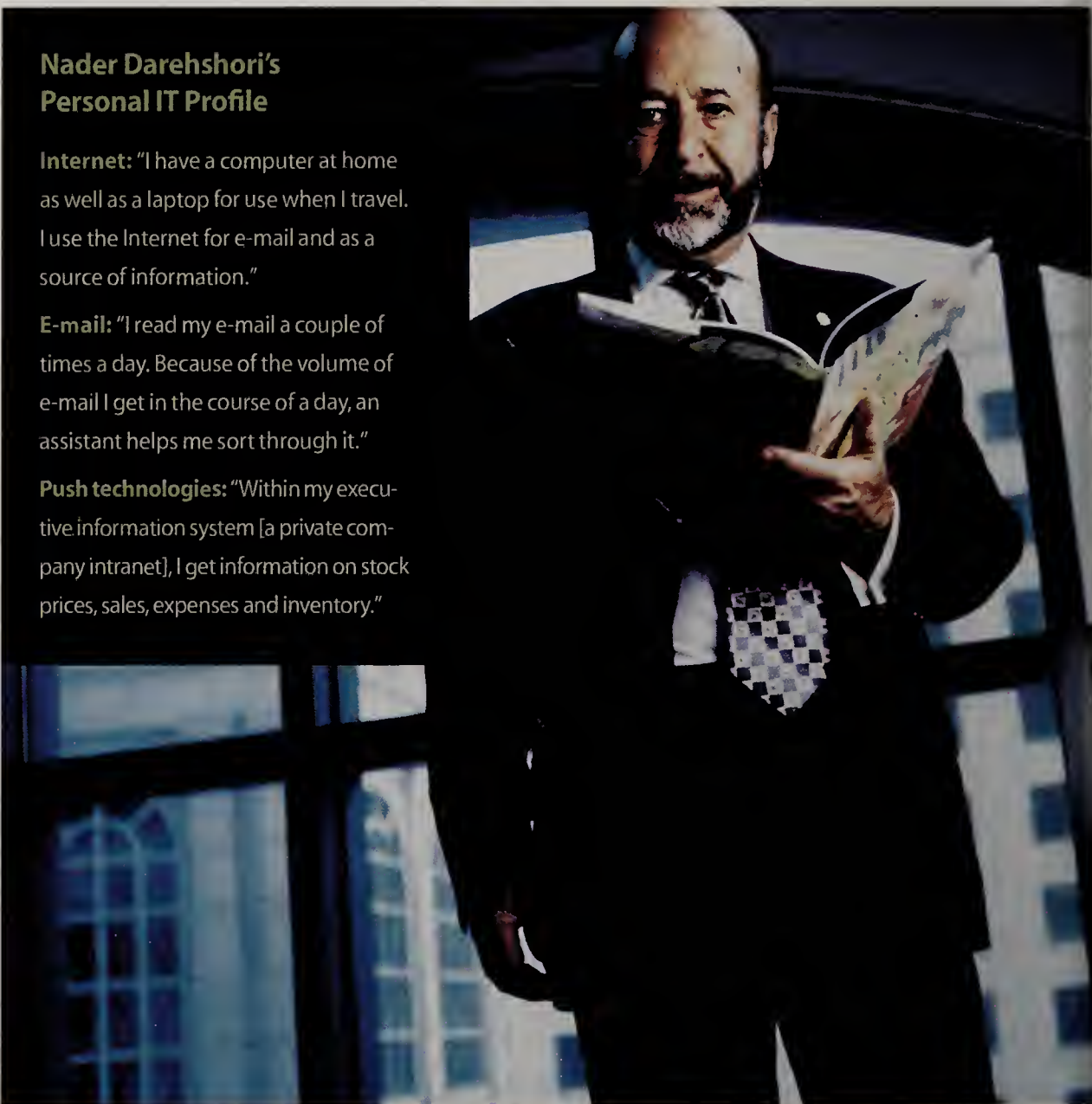
versus the old car," he points out. Many of the benefits derived from a new car are hard to quantify, like the peace of mind of knowing you can rely on it to get you to work in the morning. Darehshori carries over the comparison

Nader Darehshori's Personal IT Profile

Internet: "I have a computer at home as well as a laptop for use when I travel. I use the Internet for e-mail and as a source of information."

E-mail: "I read my e-mail a couple of times a day. Because of the volume of e-mail I get in the course of a day, an assistant helps me sort through it."

Push technologies: "Within my executive information system [a private company intranet], I get information on stock prices, sales, expenses and inventory."



as clear proof of the significant change the corporate leadership has undergone in its appreciation of technology. Mooney now sits on the executive committee and has open access to Darehshori's office, which Mooney points out he takes advantage of on almost a daily basis.

Unlike most CEOs, Darehshori takes a surprisingly philosophical stance on the subject of IT investment. While Darehshori understands that IT investments should have concrete business objectives, he also recognizes that they can provide intangible benefits that often are just as important. He compares the choice of investing in a new technology to buying a new car. "You can't always justify the economic value of the new car

to e-mail. "If you had asked me, 'Can you justify the economic value of e-mail?' it would have been very difficult, especially in the beginning, to justify how it would help us economically," he says. Now everyone in the company has e-mail, and they can communicate with each other far better and exchange information more actively. Putting a price tag on that is tough to do. According to Darehshori, the key to making good technology choices is an open dialogue. "You can achieve that only by having a group of executives who communicate and discuss things openly and say, 'Yeah, maybe we can't justify the economic value of this, but it really makes sense to be able to do the job.'"

William S. Stavropoulos

President & CEO,
Dow Chemical

The Dow Chemical Co. in Midland, Mich., is a world leader in the production of chemicals and the biotechnology research field. Its sales in 1998 exceeded \$18 billion.



William Stavropoulos has two main goals for Dow's information technology systems. The first is to use IT to serve customers better, and the second is to use it to improve the company's productivity. "If we can use IT to do these two things better than our competition," says Stavropoulos, "then IT can be a source of competitive advantage for Dow."

According to Stavropoulos, the company's IT goals and business goals are locked in step. For example, when the company was making an effort to develop a global standard for its work processes, the IS group was simultaneously

putting an SAP system and a global reporting environment in place. Corporate culture changes like layering the organization and giving employees a greater sense of empowerment were also enabled by IT in the form of the Dow workstation, a standard PC and software package that gives employees online collaboration capabilities as well as access to virtual training seminars.

Though Dow didn't appoint its first CIO, David Kepler, until February 1998, he has quickly been given a spot on or access to all of the top executive groups within Dow. Kepler is a member of the Corporate Leadership Team (CLT), which comprises the top 35 executives in the company. Kepler also runs the company's Global Information Management Team (GIMT), which is made up of the IT experts from each of Dow's businesses and functions. The team studies the technology needs of each business group and then makes recommendations to the CLT. Kepler also has a place on the agenda at most CLT meetings to discuss the status of IT projects.

Kepler is the filter through which Stavropoulos gets most of his technol-

ogy information, and Stavropoulos feels that their relationship has been an educational one. Kepler regularly updates his boss on the activities of the GIMT as well as general technology issues and trends. "Any CEO's time is in high demand...so any help that Dave gives me on condensing information and focusing me on critical decision points is greatly appreciated." In addition, Kepler has convinced Stavropoulos of the long-term value of establishing investment plans for IT.

Stavropoulos keeps up on technology issues through meetings with senior leaders at Andersen Consulting, including CEO George Shaheen. Stavropoulos also stays current on the issues by serving on the boards of two high-tech companies: NCR Corp. and BellSouth Corp.

Like many other companies, Dow's future IT investments will be focused largely on e-commerce and knowledge management. Stavropoulos believes that more intriguing than the actual technologies will be the changes that they enable within the business units, such as improving relationships with customers and encouraging employee innovation.

William Stavropoulos' Personal IT Profile

Internet: "I use the Internet to track financial news and to get an idea of how other companies are using the Web to communicate with their stakeholders and in some cases to sell their products."

Favorite Internet sites: "I find that the sites for *The Wall Street Journal*, *Financial Times*, *The Economist*, CNNfn and NewsEdge are reliable, authoritative sources of information."

E-mail: "I use it daily. My assistant sorts and organizes it first, which is very helpful in terms of the use of my time."

Push technologies: "Stock quotes via Quotron. Also, we use NewsEdge to monitor and deliver all news coverage about Dow in the press as well as news coverage of our industry and other issues we track."

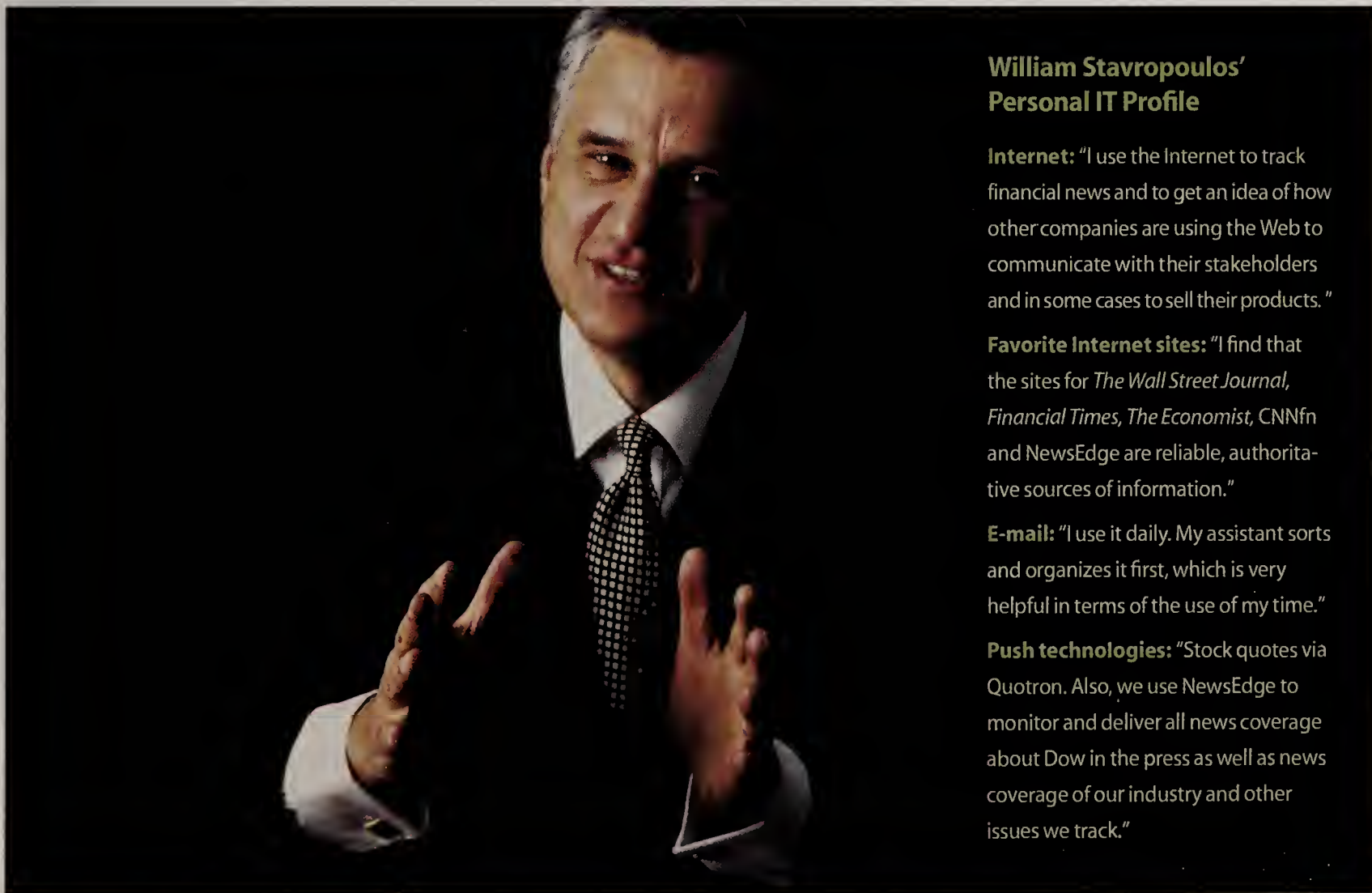


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David Fuente Chairman and CEO, Office Depot

Office Depot Inc., based in Delray Beach, Fla., is the largest (by revenue) office supplies retailer in North America. In 1998 it had sales of nearly \$9 billion.



"We often get accused of being the 'Ready, Fire, Aim' people," jokes David Fuente, referring to the rapidity with which his company went from setting its sights on e-commerce to going live with officedepot.com in January 1998. A mere five months earlier, Paul Gaffney, senior vice president of commercial sales at Office Depot, had walked into Fuente's office laden with projections and plans detailing the possibilities of a foray into online retailing. Never one to let the grass grow under his feet, Fuente swiftly approved the plan, a move indicative of both his strong faith in his people and his willingness to take gambles.

Fuente's intense involvement in technology issues reflects the experience of a CEO who has seen his company grow

from zero to almost \$9 billion in sales since the company's founding in 1986. "A lot of it has to do with being a small company that grew rapidly," muses Fuente. "You had to be involved; it was just that simple."

He sees his continuing role in the company's IT development as a set of four responsibilities. The first is to make sure that the hardware the company has in place is high quality and consistently reliable. Fuente learned this when Office Depot was experiencing growing pains in the early 1990s. "I wasn't happy with the reliability of our systems," says Fuente. "We were having constant crashes and problems, and we had to deal with some very difficult questions centered around the basic issue of whether to stick with midsize computing systems or switch to mainframes." The company eventually chose the latter. His second responsibility is ensuring that a consistent philosophy underlies decisions about database architecture and applications. Third, Fuente looks at current applications projects through the critical lens of strategic business priorities, enforcing a strict alignment between IT and business. Last of all, Fuente requires employees from the business and IT sides to be cross-literate,

ensuring a high level of communication between the two units.

Bill Seltzer, Office Depot's CIO and executive vice president, helps Fuente stay on top of these issues. Every Monday, Fuente meets with Seltzer and other executives to discuss corporate strategy and current business initiatives, including IT projects. The IS group usually has 8 to 10 projects going on at any one time; two of its current initiatives, for example, involve supply chain management and warehouse quality control. "We generally look at one or two projects per week," says Fuente. "Every eight weeks or so we review every major [IT] project going on in the company."

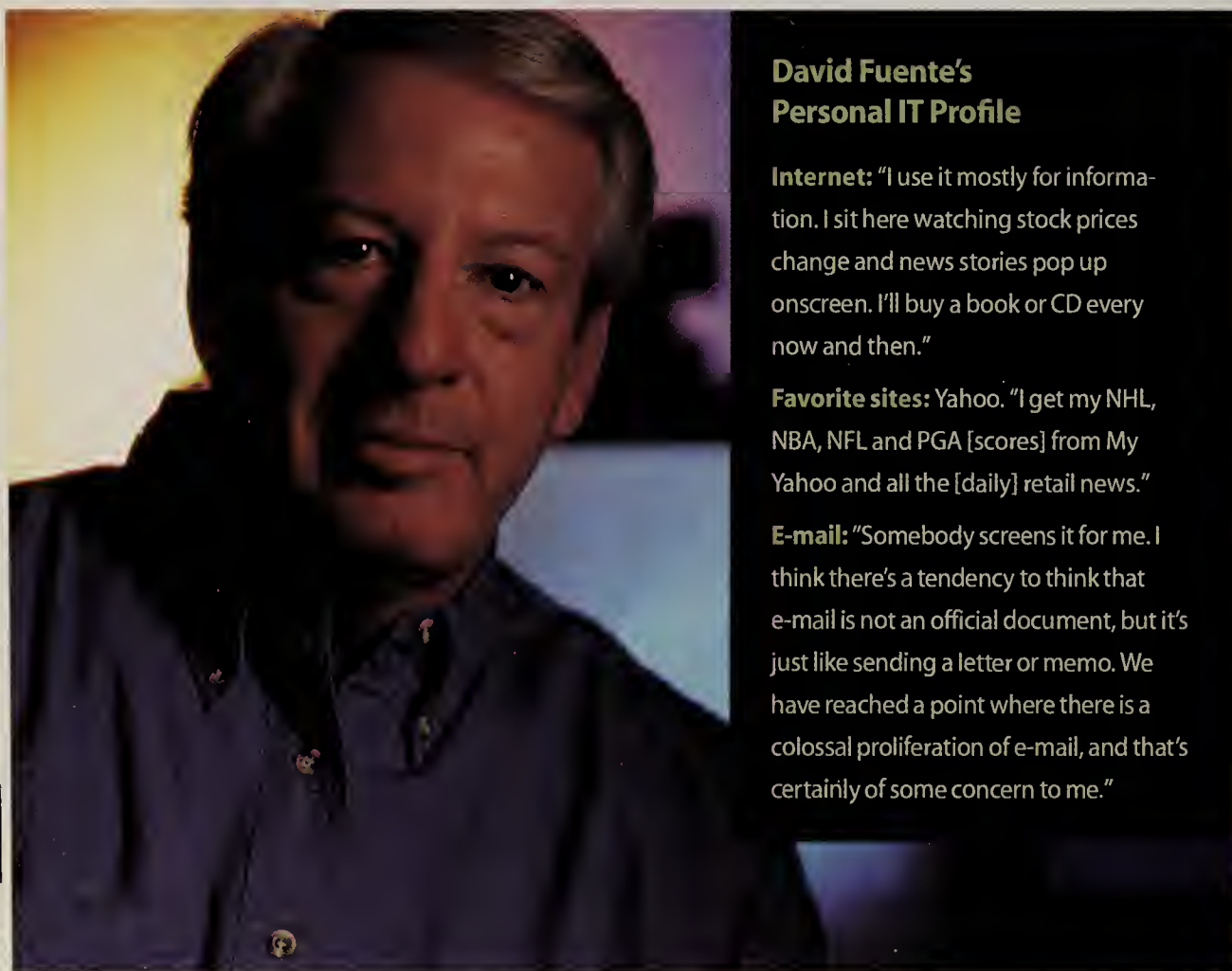
In addition to his in-house resources at Office Depot, Fuente draws information about technology from a multitude of sources, including business contacts, conferences, books and magazines. "[CEOs] are surrounded by technology these days," says Fuente, "and if you are not willing to get involved, I don't think there is any way you can lead your company."

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David Fuente's Personal IT Profile

Internet: "I use it mostly for information. I sit here watching stock prices change and news stories pop up onscreen. I'll buy a book or CD every now and then."

Favorite sites: Yahoo. "I get my NHL, NBA, NFL and PGA [scores] from My Yahoo and all the [daily] retail news."

E-mail: "Somebody screens it for me. I think there's a tendency to think that e-mail is not an official document, but it's just like sending a letter or memo. We have reached a point where there is a colossal proliferation of e-mail, and that's certainly of some concern to me."

Carl Pascarella President & CEO, Visa USA

Visa USA, based in Foster City, Calif., operates the world's largest consumer payment system. Total spending on Visa cards in 1998 was over \$610 billion.



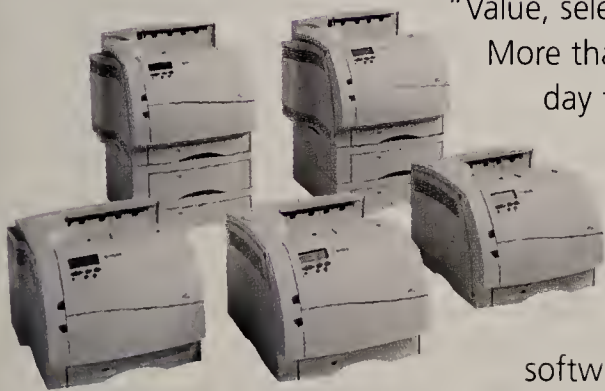
Visa USA's advertising motto of "It's everywhere you want to be" provides a very telling glimpse into the technology challenges that Carl Pascarella and his executive team face. The credibility of Visa products rests entirely on the shoulders of the company's information systems. With more than 7 billion transactions being processed in the United States each year, systems have to be up 24/7 and 99.9 percent of the time. "If your card doesn't work because our systems don't work, it's a brand failure, and it's a corporate

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failure," says Pascarella. "We are at the very underpinnings an IT company."

Unlike many CEOs, Pascarella comes from a technology background. He worked as a systems manager and jokingly refers to himself as "a programmer of little note" from the old assembler language days. Despite his experience and keen interest in technology, Pascarella faces the same challenge that other CEOs do: judging technology by its business benefits rather than its intrinsic merit. The example that he uses to illustrate this is Visa's transformation from a credit

card company with a single product line to a multiline, multiservice company that offers check cards and operates as the second largest automated clearinghouse in the country (second only to the Federal Reserve). The key to this achievement, according to Pascarella, is that Visa uses technology as an enabler rather than a driver.

Not surprisingly, Pascarella believes strongly in maintaining a close working relationship with the IS group. That relationship is so important that when he took the CEO job at Visa USA he

brought Bill Stewart, executive vice president of IS, with him from the Asia-Pacific group. "We think alike," Pascarella says of Stewart, which frees him to focus his attentions on the strategic-level IT decisions rather than the more mundane IT issues.

Both Stewart and Scott Thompson, executive vice president of systems development, support and customer service, are members of the senior management group that meets each week. Having the technology people take part in the business decision making is important to Pascarella because he sees the two groups as inextricably linked—a decision made in one area necessarily affects the other.

Pascarella also looks to nearby Silicon Valley for enlightenment on technology issues. Friends like Craig Barrett and Paul Otellini of Intel Corp. and Scott McNealy of Sun Microsystems Inc. offer Pascarella insight on open networks, the Internet and future technology trends. "To use them as a sounding board and to get an external, objective point of view is very important to me," says Pascarella.

Much of Visa's future plans are tied into the promise of e-commerce, and Pascarella is focused on ensuring that Visa has the infrastructure, the connectivity and the flexibility to reap its benefits. The future challenge for Visa will be the move to a point-of-convenience model, which will allow customers to make transactions with a smart card or chip card from any device they want to use, whether it's a PC, a handheld PDA or an ATM. Pascarella also notes that Visa is working on an open platform that will allow consumers to configure their cards to activate a PC or other device and make purchases or conduct financial transactions. When e-commerce and the new chip-card technology collide, Pascarella will continue to play a leadership role in integrating Visa's technology and business strategies. "We cannot afford as CEOs to shy away from the technical side of the business," Pascarella says. "We have to be able to embrace it and understand strategically why it's important, where it's taking us and what the market needs are from IT." **CIO**

Staff Writer Daintry Duffy can be reached at dduffy@cio.com.

Warren Bennis's Commentary

It's Cool to Be Hip

THE CEOs IN THIS ARTICLE ARE ATYPICAL IN their enlightenment about the role of information technology in their businesses. All four recognize the significance of IT for business improvement. All four have integrated technology into their business plans. All four are not intimidated by technology and use it themselves.

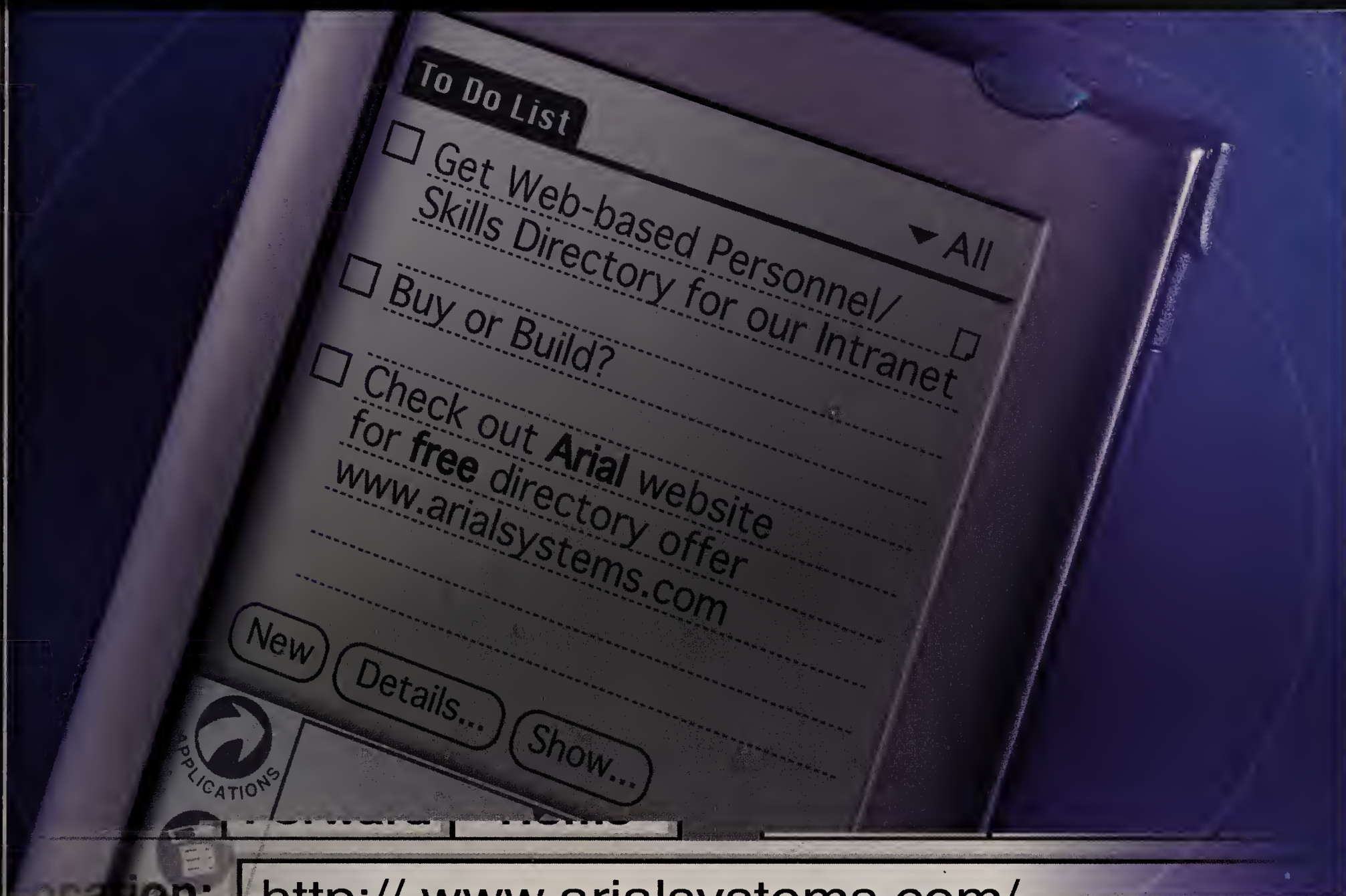
I cannot say the same about many of the CEOs I come in contact with or read about. Many are Luddites. They scorn familiarity with technology as "being hip" and say they have no need to be hip. But I've been racking my brain to come up with a business or industry that will not be transformed by this information-rich era. Barbers and manicurists are all I've come up with, and you can probably make an argument about why even they might be affected.

The question then is, How can CEOs become enlightened about IT? One answer is that they become learners. Like Pascarella, Darehshori, Stavropoulos and Fuente, they figure out what technology can do. They embrace and elevate the leadership role of the CIO. They create technology that will improve customer service and productivity. These CEOs make it clear that they are bringing in IT for business improvement, not for the sake of having IT.

I would also advocate to CEOs that they consider their CIOs as co-leaders of the enterprise, someone who, along with themselves and a few other key officers like the CFO and COO, lead the organization as part of the Office of the CEO. Dow Chemical CIO David Kepler has a spot on the agenda of each meeting of Dow's board of directors. I think that's terrific. He's also a member of Dow's Corporate Leadership Team, along with 34 other managers. I'd challenge Dow's CEO to also make Kepler a member of a much smaller and intimate group of officers that lead the enterprise. That would be truly enlightened.

—Warren Bennis





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Future Shocks

Y2K tops the list, but plenty of other IT emergencies are waiting to erode corporate profits

BY LAUREN GIBBONS PAUL

THE Y2K PROBLEM HAS turned into a long, expensive chore. By the time New Year's Eve rolls around, companies will have spent billions to correct a technically trivial problem that too few people took seriously—until it threatened to bring our lives and corporations to a grinding halt.

After such an experience, Mahogany Row inhabitants might be forgiven for examining their IT systems with a slightly wary eye; if it happened once, it can happen again. Thinking that forewarned is

forearmed, we asked a group of business and technology pundits to list their top choices for the IT-related crises that lie beyond Y2K.

The conversations were marked

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by phrases like "Internet time" and "customer-centric," but fascinating as they were, no single peril emerged as the next Y2K. Instead, the experts veered from wild blue-sky prophecies to practical predictions of a more granular nature. Their wide-ranging lists underscore what inhabitants of the Information Age should already know: Technology permeates corporate life so thoroughly that the term 'technology problem' slices too thin. Technology powers not only business innovation within

Although he knew his current position was,
to say the least, compromising,
Oscar's urge to dig deeper was too strong to resist.



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many companies but also serves as the engine driving our robust economy. So these days, executives need to realize that a technology problem isn't just about computers. It's about the business.

With the end of the Y2K nightmare in sight, now is the time for business executives to take a long-sighted look at the Gordian knot of business and technology. Peruse our short list of the next big "technology" crises and start working to avoid them.

Stephen S. Roach

A New York Times reporter recently called Roach, chief economist and director of global economic analysis for Morgan Stanley Dean Witter & Co. in New York City, a "techno-pessimist." But Roach believes he's a realist—especially about technology's potential to affect productivity gains. He predicts the following:

A major disappointment in Internet investment pay-back. "The Internet piece of the market is now dominant, so Internet valuations are having a highly disproportionate impact. Should the Internet prove to be a disappointment, it could have a very bad effect," says Roach. Most investors are betting that the Internet will ultimately result in an entirely new business climate. But, Roach asks, "What if it turns out that the Internet is nothing more than a reshuffling of the same deck rather than a new paradigm of wealth creation?" For example, if online book buying cannibalizes the corner bookstore rather than creating a new avenue for a different kind of book purchase, Internet stocks may well collapse, and the effect would be felt throughout the economy. "It would have a pretty pervasive impact on the investor base in the United States."

Technology will fail to increase worker productivity. "In knowledge-intensive occupations, it is really difficult to boost

"What if it turns out that the Internet is nothing more than a reshuffling of the same deck rather than a new paradigm of wealth creation?"

—STEPHEN ROACH

productivity at all. The processor for the knowledge worker is not a PC or laptop; it is the human brain. Barring some type of breakthrough in genetic engineering, I think it is unlikely we will see a cerebral productivity gain. It's not going to come from IT." Roach disagrees with industry observers who attribute gains to IT investments finally paying off. "I happen to love technology personally, but the paybacks for the economy are far, far down the road."

Crippling IT budgets. "The technology commitment is now so enormous that it's setting us up for a major earnings disappointment for the entire corporate sector," Roach says. "It used to be that the bulk of the service economy was variable cost producers. Due to waste mechanisms, these companies had a lot of flexibility to protect their margins in tough economic times. In the Information Age, this variable-cost service sector has been transformed into a collection of fixed-cost producers, [who are] lacking in flexibility and vulnerable to a downturn."

Eric K. Clemons

Top executives often call on Clemons, professor of operations and information management for The Wharton School of Business in Philadelphia, to help them chart the future. But the crystal ball isn't the answer, says Clemons. "If you can't tolerate ambiguity, you're going to get caught flat-footed five years from now." He forecasts that flatfoots will stumble over the following:

Wrong CIO skill set. "The

guys who run systems groups tend to have the wrong skill sets for today's changing business world," he says. "They're focused more on finance and performance and less on strategic uncertainty. They like concrete answers and certainty." Unfortunately, there's nothing certain about the technological war zone of the Information Age. "Today, many heads of IS in large organizations understand historical risk profiles, managing technology risk and project complexity. But those have very little to do with business strategy," says Clemons. He adds that executives looking to hire a CIO for the new millennium will "look for people who were a disciplinary problem in high school. You've heard of thinking outside the box? We need people who can't even find the box, who don't know why there are rules."

Inflexible IT systems. Companies will miss huge profit opportunities because their systems do not interoperate as they should. "Everyone is talking about the interconnected, virtual company, but our information systems do not enable that," says Clemons. The result? "Many companies will be unable to make the move toward flexible, modular, responsive, customer-focused systems," he says, a change that he thinks is vital as companies develop closer ties with their customers.

Laggardly development cycles. "CIOs will have to move much faster than [those at] most companies today are capable of doing," Clemons notes. Most senior IT executives still expect to spend five years gathering requirements, customizing, training and



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rolling out an enterprise application, he says, and that's four years too long if an organization is looking for a competitive advantage from the project.

James A. Harding

Harding, CIO of temporary staffing services provider Olsten Corp. in Melville, N.Y., says he worries a lot about being blindsided by IT crises. The disasters he fears most:

Missing the e-commerce boat. "We have huge, pent-up demand from the marketplace for Web-enabled applications. Right now, our customers have to phone one of our offices to place an order for a temporary employee. They want to place the orders [on the Web] and get the status right from their desk. Another service we provide is extensive reporting on how much money [our customers] save by using temporary staff versus full-time staff. Today, all that information is mailed out, but it should be on the Web. CIOs face the pressure of timely delivery to the marketplace," says Harding. The implied threat: If companies can't meet customers' Web needs, the competition will.

Unreliable Internet bandwidth. "The performance of distributed computing systems is a huge challenge. With Internet applications, you don't control the infrastructure. Even if you beef up your systems, you're reliant on the computers that bring the user to your system. If I do [create this Web application], how will I ensure it will work like my internal stuff?" asks Harding. The short answer is that you can't. Running customer applications over the Web is a little like depending on a pitcher who throws knuckleballs: expect both brilliance and complete disintegration.

Watts Wacker

CEO of think tank FirstMatter LLC in Westport, Conn., Wacker is also the reigning futurist at SRI International. Wacker says executives spend too much time thinking logically. "Reason-centric thinking must give way to knowledge-centric and media-centric thinking," he says. His top IT problems:

The profusion of operating systems. "There are close to 100 OSs with some degree of viability," which represents exponential growth in recent years, he says. Wacker thinks that OS price wars will break out among vendors vying for position, and companies will be paralyzed for fear of picking the wrong vendor. "It doesn't matter if they drop [OS] prices if you can't figure out the right decision. I don't want to be trapped."



The development of a knowledge underclass.

"We're moving toward ubiquitous access to PCs and the Internet. But knowing what to do with all this technology will become a point of social demarcation," Wacker says. Ironically, he thinks the knowledge underclass will be partially populated by CEOs and other top executives who still don't know how to send an e-mail message and perform other basic activities. Organizations headed by a member of the knowledge underclass will lead their companies to disaster.

Giving away the information store. Wacker refers to information about a product as meta data. Meta data can be a hidden source of profit, Wacker notes, but many companies will miss this

opportunity. For example, he says the *Official Airline Guide* made more money from its flight data between 1984 and 1994 than the airline carriers combined. "The crisis lies in giving away things that you did not know had value. Recognizing the value is tricky."

Anant Agarwal

As a professor at MIT's Laboratory for Computer Science (as well as Chairman of InCert Software Corp.) in Cambridge, Mass., Agarwal believes the speed of what he calls "Internet time" will be at the heart of most IT crises in the near future. His picks:

Software quality decay.

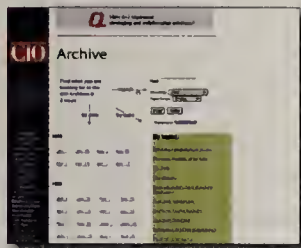
The Internet has significantly increased consumer demand for software applications through intranets, extranets and transactional Web sites. And those consumers don't want to wait. "People's expectations have increased dramatically," says Agarwal. But as development cycles accelerate to meet user demand, Agarwal predicts that quality will suffer. "If

your software applications do not withstand the needs of your customers, your company will not survive."

Inadequate security. Even small breaches of a company's system infrastructure—whether caused by viruses or criminal hacks—can have devastating effects. And as the popularity of online shopping explodes, there will be a corresponding rise in the number of security incidents. Under intense pressure to get e-commerce applications out, many companies have given security short shrift. Up until now, most hackers have been bent more on mischief than on crime, says Agarwal. That will change soon, as terrorists and criminals launch their own campaigns against the companies and people

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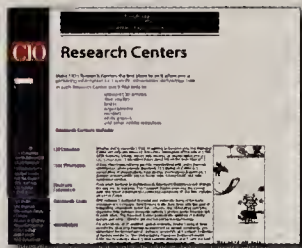
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Y2K Pain Index

This chart of Year 2000 probabilities shows how the Year 2000 software glitch will affect you based on connectivity to external organizations and business partners.



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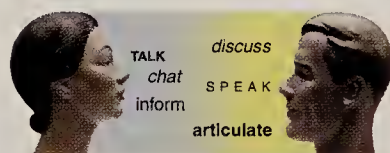
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who use the Internet. Willie Sutton's famous quote about robbing banks because "that's where they keep the money" will soon apply equally to the Internet as transaction volumes rise significantly. "Defense organizations around the world see the problem looming," he says. "Consumers haven't seen anything yet—but they will."

Capers Jones

As chief scientist at Software Productivity Research Inc. in Burlington, Mass., Jones says Y2K is not the last system-related date disaster. His dates with disasters include the following:

Aug. 21, 1999. The rollover of the GPS (global positioning system). The network of 24 GPS satel-

lites keeps track of dates by recording the number of weeks from midnight on Jan. 5, 1980. By Aug. 21, 1999, the counter will reset to 0000. Companies and government agencies that use the GPS system must test ground units and software applications to ensure the rollover will be handled correctly.

Feb. 29, 2000. The year 2000 is an especially rare type of leap year that occurs once every 400 years. Many applications may assume that 2000 is not a leap year, says Jones, and that assumption needs to be tested. Computers that fail to recognize this could either shut down or double-post calculations. Either could cause disaster.

Sometime in 2012. Around this time, the number of phone numbers in the United States will

exceed the capacity of the number of digits currently assigned, unless another number scheme has been introduced. When the saturation point is reached, massive software updates will be necessary.

Jan. 19, 2038. The Unix operating system stores dates as the number of seconds accrued since Jan. 1, 1970. This method works until Unix time reaches 2,147,483,647 seconds, which will occur on Jan. 19, 2038, at 3:14 a.m. Some applications written in C may then revert to Jan. 1, 1970, as the current date, while others may assume it is Dec. 13, 1901. **CIO**

Lauren Gibbons Paul is a freelancer writer based in Newton, Mass. She can be reached at lauren paul@sprintmail.com.

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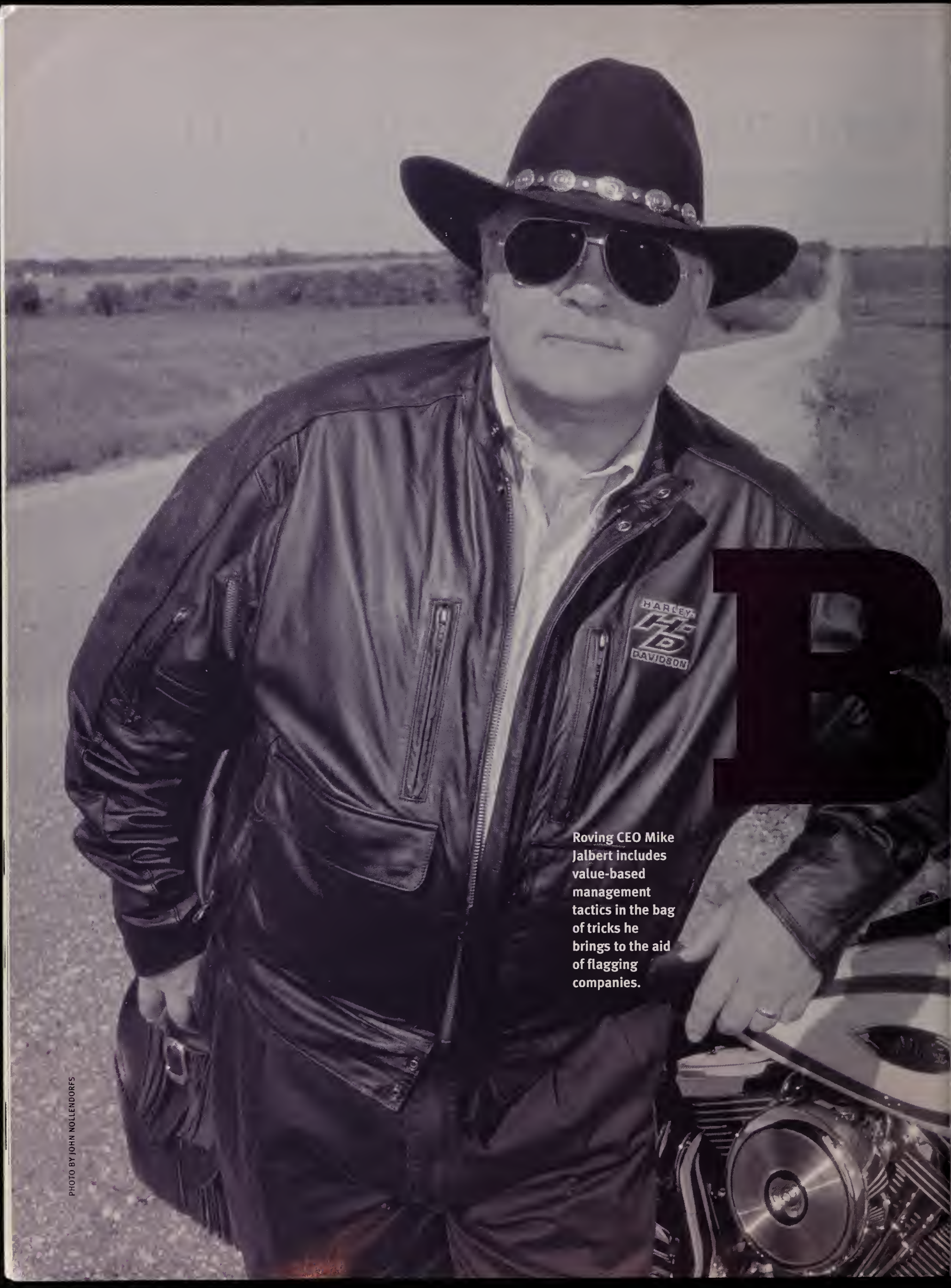


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PHOTO BY JOHN NOLLENDORFS

IKE JALBERT IS A CEO GUN-FOR-HIRE.

The turnaround expert took the helm of Alexandria, Va.-based Microdyne Corp. in March 1997 when the computer adapter-card manufacturer faced bankruptcy. The company's stock had hit a low of \$2 per share. In 1995 revenues had peaked at \$170 million but in 1997 were a disheartening \$43.6 million. The consensus of experts in the computer adapter-card industry was that the company had less chance than a balloon in a pin factory.

But Jalbert sees hope and possibility where others see red ink and disaster. His plan for Microdyne was to make those tough decisions about which lines of business would live and which would die. In addition Jalbert would apply principles of value-based management (VBM), an approach that builds company worth by relentlessly eliminating nonvalue-producing costs and investing whatever resources are left solely in assets or projects that will grow to be assets at a rate that exceeds market expectations. Jalbert is no VBM seer, just a businessman willing to make tough choices. But whereas gurus, self-proclaimed experts, consultants, academics and other advisers do not have to put it on the line in quite the same way as a CEO, Jalbert's

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Practitioners of value-based management pursue a hard line for corporate success

BY PERRY GLASSER

knack for keeping his eye on the ball is special (see "Business Prophets Promise Profits" below). VBM principles aren't only for turnaround situations, however. For hungry corporations whose executives may have been distracted by trendy theories, here's a set of ideas that will focus the organization's attention on value. Hunger does a good deal to focus the mind.

Stakeholders—whose wallets grow hungry in the absence of revenues and profits—sure like Jalbert's style. On Dec. 3, 1998, just over a year and a half after his appointment as president and CEO, Microdyne was bought for \$5 per share by L-3 Communications Holdings Inc., the hot Bethesda, Md.-based spinoff of Lockheed Martin. That means the company's total market capitalization grew from \$36 million to \$90 million during

his tenure. That's a honkin' bucket's worth of value.

Value from IT

AT MICRODYNE, JALBERT FIRST applied VBM by looking at how the company used and invested in information technology. Then he invested heavily in the company's IT infrastructure, buying an ERP system to optimize manufacturing strategies while making those jibe with financials. Microdyne purchased Oracle Corp. Financial GLAPR software for general ledger tasks. Jalbert found the IT systems of Microdyne's telemetry division to be shockingly primitive. The division's product can gather data from moving objects such as satellites. It sells technology at the state of the art. But back on the ground the division was using

desktop PCs with 286 processors, AOL dial-up accounts for e-mail and Internet access, and very limited in-house networking. Because Jalbert's strategic plan to add asset value called for a client/server setup, the aged PCs were connected to a network server. For full-time e-mail and Internet service, the company acquired a 256 frame relay.

Jalbert also invested heavily in intellectual assets, a trendy way of saying the company did some headhunting, offering sweet deals to the personnel it needed to hire or maintain. A final piece of Jalbert's turnaround strategy was to engage in a bit of competitive intelligence. "We needed to know what our peers were doing," he says. "When a company is publicly traded, you can get a lot of information by looking at mandatory documents filed with government agen-

Business Prophets Promise Profits

Value-based management has an unequivocal goal: measurable value

VBM

PROPOSERS BELIEVE THAT VALUE IS created when capital is invested for returns that significantly exceed the

cost of the capital. In other words, the manager versed in VBM will make strategic and tactical decisions to invest money only where the future returns on the investment significantly exceed the cost of money itself. Why go to the trouble of hiring, firing, buying and selling if the company is better off simply putting its dollars out on the street in the form of loans? In large companies that simple principle can be lost.

Management techniques pass in and out of vogue faster than supermodels strutting their stuff on Parisian runways. Every style has a different focus. The seers of total quality management (TQM) will swear that the pursuit of product perfection out to the nth decimal place will earn millions—so their initial focus is always the widget itself. Business process reengineers (BPR) care less about the widget than about how the widget comes to be; they focus on process, of course. Customer management know-it-alls prophesize doom on those who do not allow customer input to marketing, design and every other business process. Kaizen has its devotees, flat organizations its disciples, collaborative work environments its partisans, and there are even zealots who'd have you believe that the only way to make a dime is to create offices without walls.

No doubt, money eventually trickles down to where it can be

counted in all of these approaches. But where other managerial theories seem to visit the bottom line only after a circuitous journey elsewhere, VBM managers have their eye on the dollar from the beginning. And VBM managers know the eyes of stakeholders are looking over their shoulders.

And it works too. Scott Gillis, a partner of Marakon Associates Inc., a small consultancy in Stamford, Conn., that specializes in VBM techniques says, "The distinguishing factor of companies that effectively employ value-based management is an executive board with an unequivocal and unwavering vision of its purpose—which is to create shareholder value." Gillis points out that competing objectives such as global initiatives or growing market share can distract from what seems an obvious mission. Gillis believes that in many non-VBM companies only 30 percent to 40 percent of capital is actually creating value, as much as 50 percent is value-neutral and as much as 20 percent to 25 percent of capital is frequently allocated in ways that are destroying shareholder value. Companies that practice VBM consistently give shareholders a 3.1 percent higher total return relative to the average return of peers in their industry group. Marakon's client companies have included The Dow Chemical Co., Bank of America Corp., Nordstrom Inc., The Boeing Co. and the Bank of Montreal, organizations where those single-digit percentage gains add up to billions in equity.

—P. Glasser

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“Companies have to develop a mind-set such that IT is understood to be an asset.”

—HOWARD A. RUBIN, CHAIR OF THE DEPARTMENT OF COMPUTER SCIENCES, HUNTER COLLEGE, AND EDITOR OF *I.T. METRICS*

cies [such as the SEC].” What documents? What to look for? Jalbert slyly won’t say. (For more on CI, see “All Along the Watchtower,” Page 24.)

In Jalbert’s experience, companies most often get into trouble when they have been penny-wise and pound-foolish. After startup successes and a small initial public offering of stock, closely held, low cap companies may run into trouble when competitors start cropping up. For fear of dismounting a winning horse, founders who have met success are often the slowest to adapt to change. “Entrepreneurs can be rigid,” Jalbert says. “I’ve gone into companies and met people who say, ‘I don’t believe in voice mail.’”

Think Assets, Not Costs

WHEN LEADERSHIP CAN NO longer adapt to changes in the marketplace, a person like Jalbert comes in, bringing new perspectives and fresh ideas. But precisely how does an executive identify IT projects that will be perceived by the market as powerful assets and not bloodsucking costs?

Howard A. Rubin, chair of the department of computer sciences at New York City’s Hunter College and editor of the journal *IT Metrics*, says that “companies have to develop a mind-set such that IT is understood to be an asset.” This belief must be held at every level of the company—finance, customer management, organization and process operations—and since “IT must be an asset” is a credo too easily given only lip service, Rubin also offers some concrete advice for how this mind-set can actually be achieved.

- Project over time the expected ROI of any IT investment.
- Identify the separate roles of techni-

cians and business people in any IT project.

- Track actual versus projected ROI of the project.
- Make continuous adjustments to tracking procedures that trace company culture to identify norms that resist the project.

To make his point about how companies can deceive themselves when it comes to measuring IT ROI, Rubin tells of an insurance company that developed an IT system that it presumed would increase agent productivity by 20 percent. That figure was not pulled from a hat—pilot runs demonstrated that the work of recording, adjusting and accessing policy files that was once performed in five days could be performed in four. But executives were chagrined to learn that the expected rise in productivity never materialized. It seems the company’s agents were so delighted with the efficiency of the new systems, they were taking off one day a week. So long productivity, hello golf cart.

Strictly applied, VBM smiles on strategic and long-term IT investment ventures, such as an ERP system or an e-commerce initiative. Those kinds of projects tend to become assets that add value. While quick fixes such as standardizing message systems may make the workplace a little more pleasant to inhabit, in a VBM-oriented company with competing demands for resources, the incremental improvement in productivity precipitated by a change for workers’ convenience has to be demonstrable in terms of money. Such a requirement permanently removes technology-for-its-own-sake from the driver’s seat in a company’s IT infrastructure. It also means that squishy, distracting projects such as collaboration, team

building and knowledge management better promise a solid dollar return before they show their heads in the boardroom. After all, why invest money in an organizational theory when other investments will bring a sure 10, 15 or 20 percent better return? “Historically, IT has been perceived as a cost center,” Rubin says, but applying a VBM perspective to a company requires that IT be evaluated and measured in terms of expected yield.

Hard Times, Hard Decisions, Hard Questions

ON BOARD AT MICRODYNE IN 1997, Jalbert looked at the yield of the computer adapter-card line and how competition was squeezing its profit margins to zero. After 90 days in the president’s office, he decided to jettison the whole losing proposition. The adapter-card business was put on the selling block, but a sale never materialized. “We took the write-off,” Jalbert says.

But Microdyne had two small lines of business (LOBs) in which Jalbert saw promise—and the company’s future. One was the aerospace telemetry division, that line of satellite radio receivers that Jalbert calls “stuff for spooks.” The other promising LOB, no more than a project in the works when Jalbert arrived, was a technical-aid call center and help desk operation. The new angle on that idea was to allow the call desk to be the vanguard of an outsourcing LOB. Those two LOBs became Microdyne’s core businesses.

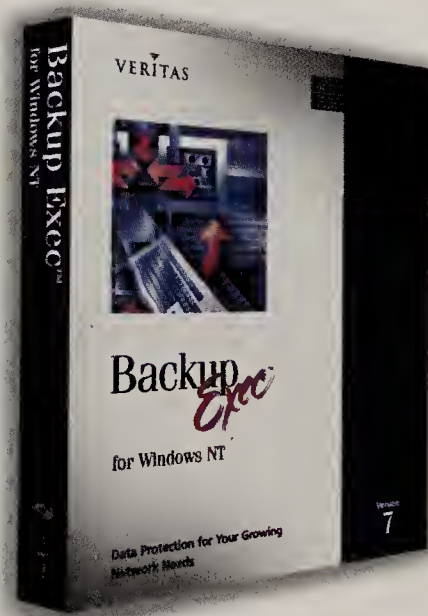
Decisions about the business are inevitably decisions about people. Jalbert believes distressed companies often have employees who know the answers to troubling questions but simply won’t say or have never been asked.

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Couch Potatoes Want Value Too

Need more customers? Reach out on the Web.

Marc Gabelli directs Gabelli Assets Management Inc.'s Global Interactive Couch Potato Fund, which invests in entertainment, communications and interactive media.

GABELLI ASSETS MANAGEMENT INC. has been making piles of money for its customers for years, but now it has new obligations to confront: Shareholders stare over management's shoulders ever since the company went public in February. Marc Gabelli, managing director of the company, describes the snowball effect of creating shareholder value. "If we have more customers, we'll control more assets. More assets, more profit. More profit, a higher stock price."

The challenge: How to start the snowball rolling. Obtaining customers is a marketing job. Marc Gabelli is an astute businessman who needs no consultants to tell him what he knows. "You want to know what's wrong with our marketing?" he says. "Look at our Web site. It sucks!"

The problem isn't the product. Gabelli's Global Interactive Couch Potato Fund earned as much as 41 percent in one year for its investors. The Rye, N.Y.-based Gabelli

organization manages \$18 billion in assets, evenly divided between accounts specially managed for deep pocket investors and Gabelli's 23 publicly traded mutual funds.

In a value-based management decision, the Gabelli organization decided to invest some of its IPO money in IT tools. But its first investment was an intellectual asset—a guy named Raffaele Pisacane. Pisacane says he was named CTO "because we couldn't have two CIOs." Pisacane laughs. "Mario Gabelli, he's the chairman and chief investment officer. Nobody wants to change the boss's title."

Pisacane has the right stuff: He worked on the consumer Web site at Standard & Poor's Corp. and on the IT architecture at the Federal National Mortgage Corp. Pisacane expects to create a similar IT architecture at Gabelli as well as a Web site. Marc Gabelli looks forward to meeting—and retaining—customers who come to Gabelli online. "Right now we [sell to] only 20 percent of the customer leads that come to us," Marc Gabelli says. "That's terrible." Pisacane adds, "The Web is a pervasive channel in finance. That's our strategy to add shareholder value."

—P. Glasser

Jalbert makes a point of asking—it's a bit of knowledge management. In fact it's step one. To identify those folks who may hold the answers, he recommends that other CEOs ask each executive four questions:

- What do you do?
- What were you hired to do?
- What do people think you do?
- What do you want to do?

If the answers make sense, says Jalbert, you know you're talking to a grounded executive. If the answers don't make enough sense, you might be talking to a potential staff cut. A lot of shareholder value goes out the door as salary in the pockets of executives who are fuzzy on their jobs or what their jobs could be.

Right now, Jalbert is trying to work a little of his turnaround magic as chairman of Transcrypt International, an electronic cryptography company and developer of mobile radio systems in Lincoln, Neb.,

afflicted with what well-mannered analysts call "ever-diminishing resources." In other words, the company is going into the tank without water wings. But there may be hope: Jalbert has rolled up his

sleeves and expects to apply value-based management principles again. **CIO**

Senior Writer Perry Glasser can be reached at glasser@cio.com.

Sometimes You Don't Know What You've Got Till It's Gone



Remember that autographed baseball you had as a kid that you wish you still owned? And what would you give to get your old car back, the one that would be a classic today? We don't always recognize the true value of things until it's too late. Some executives don't realize how dependent their organizations are on information technology until something goes wrong.

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Maximizing IT Investments

Five steps to capturing IT value—and how to measure the results

BY JOHN R. STOIBER

YOUR COMPANY HAS JUST SPENT EIGHT MONTHS and millions of dollars implementing a new business application, when suddenly the chairman of the board asks if the application has delivered any quantifiable benefits. What do you say? Perhaps the value will not begin to accrue for months or even years. If value is realized, how will you know? Without a disciplined approach toward valuation of IT projects and a process for measuring progress toward specific, quantifiable goals, most IT and business executives will not be able to answer these questions with confidence. To increase the odds that IT projects will yield the desired results, both IT executives and their business colleagues should give “value capture”—the process of recognizing and acting upon opportunities to increase a company’s value—the same level of attention as other top IT concerns.

Five Steps to Value Capture

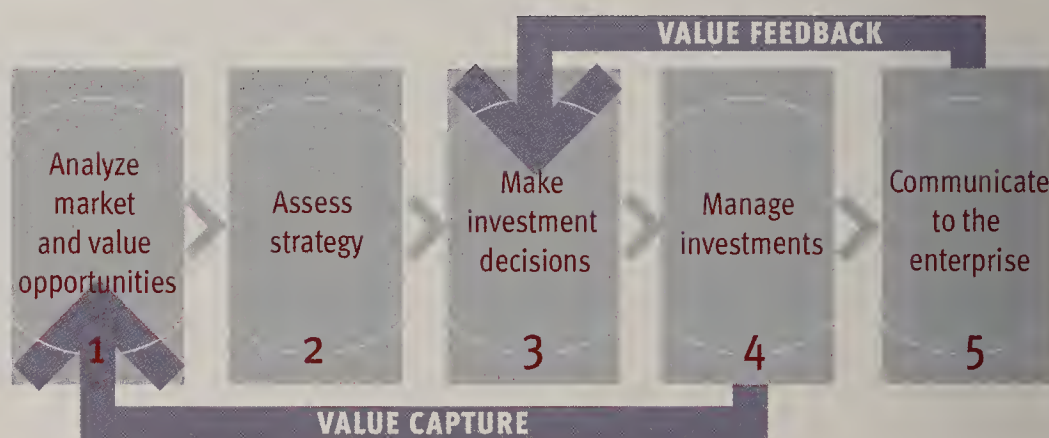
Companies that get the most out of their IT investments generally follow the five basic steps of value capture (see diagram at right). The steps are simple and logical, but too often IT and business executives skip one or more steps and therefore fail to realize value from IT implementations.

The process of capturing value begins with identifying and understanding the dynamic market forces that represent opportunities for a company to increase (or maintain) its corporate value by reducing costs, increasing revenue or improving capital management (Step 1). These market forces might include the evolution of the Internet, a competitor going bankrupt, the emergence of an upstart competitor or the passage of new industry regulations. In the second step, enterprise leaders devise strategies to focus the organization on capitalizing on those market opportunities. Step 3 involves weighing and choosing among tactical initiatives, such as implementing an enterprise resource planning (ERP) system or delving into electronic commerce, to execute the chosen strategies.

Assuming value is defined in terms of business performance, investments can then be tracked—and managed—over time to ensure that the expected value is truly realized. This fourth step, managing investments, encompasses the hard work of actually implementing the project, which might include designing and building the systems, streamlining processes and training end users. Step 4 is especially critical because no value can be accrued until those things happen. But companies that

The Process of Capturing Value

Maximizing the value of IT projects depends on completing all five steps in sequence



SOURCE: VALUE TECHNOLOGY LLC, 1999

attempt to skip the earlier steps and leap right into implementation may find that they’ve built an IT system that delivers no value at all. Companies therefore need to track results carefully to be sure the investment is paying off—that the value captured in Step 4 links back to the original market opportunities (see lower loop in diagram). If it doesn’t deliver value, then the project should be modified or scrapped and the strategy and investment decisions reconsidered.

In Step 5, communicating to the enterprise, organizations that manage their investments effectively should have a powerful message to convey to employees, the board of directors and outside stock analysts about what’s been achieved by

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Checks & Balances

investing in the project. This value feedback, as shown by the top loop in the diagram, also becomes an essential tool for refining the decision process for future investments.

Set Performance Goals

Although the five steps are straightforward, many companies don't see them to fruition because they lack the resources—or the resolve—to develop measurable goals and track progress toward them. Performance measurement is the linchpin of the value capture process. Once executives have identified a value opportunity and strategies (Steps 1 and 2), measurement becomes critical as they evaluate tactical options—including investing in new technology—before deciding which to pursue. If value is to be captured from IT, it must have a measurable impact on the performance of the business.

Before making any decisions about whether to fund a proposed IT project, you first must examine the scope of the project and break it into logical subcomponents. Then describe qualitatively (in words) how each part of the project will affect the business. If you can't articulate the desired results, the value will be difficult to quantify.

Next, think about the quantifiable performance measures that further describe the impact. For example, suppose a software package will increase the number of orders an order-fulfillment specialist can process each day. Qualitatively, the software allows the specialist to streamline a conversation with a customer, asking fewer questions and entering the information faster than before. The software's effect could be quantified in terms of orders per day per specialist, average time per order or perhaps time spent with the customer per order. Measures can address such things as productivity, quality, customer satisfaction, revenue and cycle-time reductions. Identify measures that most closely represent the specific impact of the particular IT application being evaluated and avoid measures that could be influenced heavily by other concurrent projects. This will help to isolate the impact of the application.

Quantify Performance, Not Dollars

To quantify the results of an IT project, resist the temptation to jump immediately to dollars and cents. Dollars are too general and can't readily be traced to individual investments. Although many companies are driven by bottom-line concerns, it is, in fact, hard for most people to think only in terms of dollars. It's much easier to manage to other measures such as orders processed per day

A good rule of thumb is to dedicate 5 percent to 10 percent of the project budget to quantifying expected value and measuring progress against value targets.

or orders handled correctly the first time. So consider the IT application in terms of its effect on such measures, keeping in mind that people may not use the technology as intended and that changes in process steps may be required.

For each measure selected, collect the necessary data (such as average time it took to process orders over the past year) and calculate the baseline performance. Much of the data can be tapped from existing systems or reports. Other data may require more work to collect.

Next, making logical assumptions where appropriate, estimate how the new technology will affect performance. To estimate the potential decrease in average time per order in the order-fulfillment software example, you could interview several order specialists to identify the activities that can be streamlined or eliminated. Don't assume you know what order specialists will do with the new technology. These folks will ultimately use the application, and their opinions on how it might help them to be more productive can provide critical insight into value estimates. Once you

have collected data from a reasonable number of users (say, 20 percent), calculate an average expected decrease in time per order. Then figure the potential increase in order-taking capacity, since each specialist would be able to take more orders per day.

The final, crucial step in quantifying expected performance impact is for IT executives and business unit leaders to review the value projections together. Since business leaders typically have established performance goals for their departments, performance estimates for a new system should be compared with business goals to make sure the new application will meet business needs. Both business leaders and IT executives must commit to measuring progress against performance goals to ensure that the new technology is delivering value.

Time Matters

For many IT projects, the resulting value does not always occur immediately. Although some benefits of IT begin when the system is turned on, others are dependent upon the productive use of the tools in practice. Success hinges on effective user training programs and on overcoming human resistance and may require modification of existing processes. Weigh all of these delay factors in determining when achievement of the performance targets can be expected. Be as realistic as possible to develop a believable and achievable timetable. A monthly grid outlining the 12- to 18-month period following implementation will help everyone understand when the benefits of the technology will be captured. Since performance gains will ultimately rest on the shoulders of business area leaders, business and IT executives must agree not only on the goals that the technology will help them attain but also on the timetable for achieving them.

Keep Score

By developing performance measures and estimates that define the value of the new technology, you've assembled the elements of a project scorecard—a vehicle for tracking results. Organized by the



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processes or areas affected by the new application, the various measures that constitute a scorecard should indicate both the baseline performance for each measure as well as the performance targets. Results can be tracked either numerically or graphically and are typically expressed as either a percentage of the goal or an absolute number (see "Sample Scorecard" at right). The scorecard should also reflect whether goals are achieved on schedule and can employ the grid developed to show the expected timing of performance changes to do so. Multiple scorecards can help illustrate progress in different areas, such as order fulfillment, billing and customer service, and will also enable business unit leaders to track performance in relation to their own performance goals.

Project scorecards do not have to be complex; they can be created easily using spreadsheet software with graphing capability. Even a crude measuring system is better than none at all since tracking the value of an IT project is the only way to know what you did right and what needs more work. This information is not only critical to demonstrating the success of the project but also serves as extremely valuable input into the investment decision process.

Pay for It

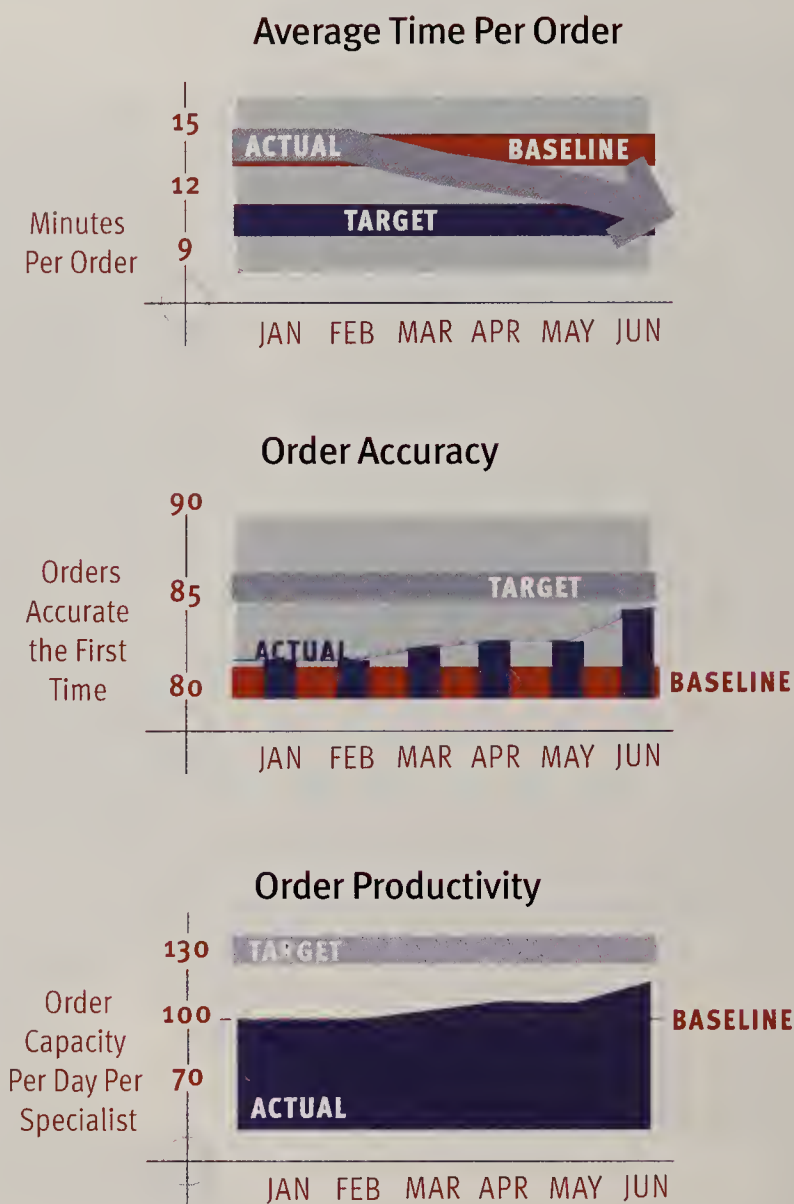
It's important to build value analysis and measurement resources into the project budget. Too often the project team does not spend sufficient time developing a detailed value analysis, and therefore the benefits are not well understood and cannot be measured. Even when benefits are measurable, the entire project team is typically deployed immediately to the next project, and achieving results is left to the user community. However, some dedicated resource, even part time, should focus on making sure that

progress is made and that results are measured. A good rule of thumb is to dedicate 5 percent to 10 percent of the project budget to quantifying expected value and measuring progress against value targets.

Speak Their Language

Because you have defined value in terms of business performance measures, you will be able to state ROI in terms most relevant to each group of stakeholders. The order-fulfillment team, for example, will identify best with productivity expressed as orders processed rather than dollars saved. However, the CEO will often be more concerned with the dollar impacts. Fortunately, translating the performance measures into dollars is relatively simple. For example, sup-

Sample Scorecard



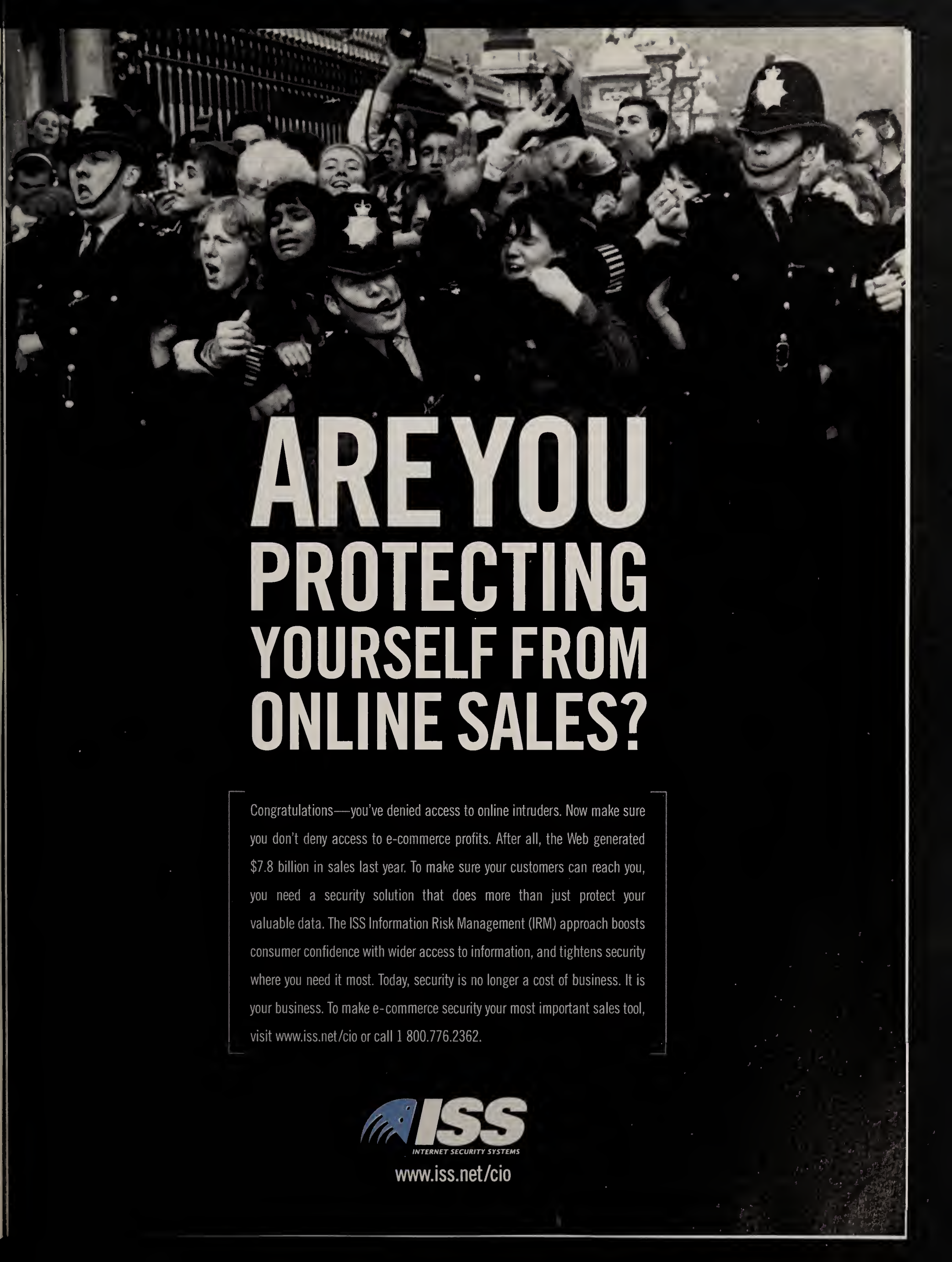
SOURCE: VALUE TECHNOLOGY LLC, 1999

pose the new order-fulfillment software is projected to yield a 30 percent productivity gain. If there are 20 order specialists, then a quick calculation would show a capacity gain (or savings) of approximately 6 order specialists (20×0.30). This means that if the department currently processes 2,000 orders per day, the same department could process 2,600 orders using the new software. Assuming each order specialist earns roughly \$40,000 annually in compensation and benefits, that translates to an annual cost savings of \$240,000—not including the money saved by not having to hire and train six new order specialists. A similar process can be used for revenue gains and capital management.

It's important to define value in both performance measures and dollars, since all stakeholders will be able to understand the impact of the new technology in terms they deal with most often. Order specialists who know that they should be able to handle 30 percent more calls each day are more likely to hit that target than if they're told the

new software will help them save the company \$1,000 a month. And ultimately, the people who use the technology determine its effectiveness. Value can be expressed in many ways, but it cannot be expressed at all unless it is captured. With clearly defined qualitative and quantitative goals and the dedicated resources to measure whether they've been met, companies will be well positioned to reap the benefits of IT. **CIO**

John R. Stoiber is CEO and cofounder of Value Technology LLC (www.valuetechology.com), a Chicago-based management consulting and Internet development group specializing in value management. He can be reached through e-mail at jrstoiber@valuetechology.com.



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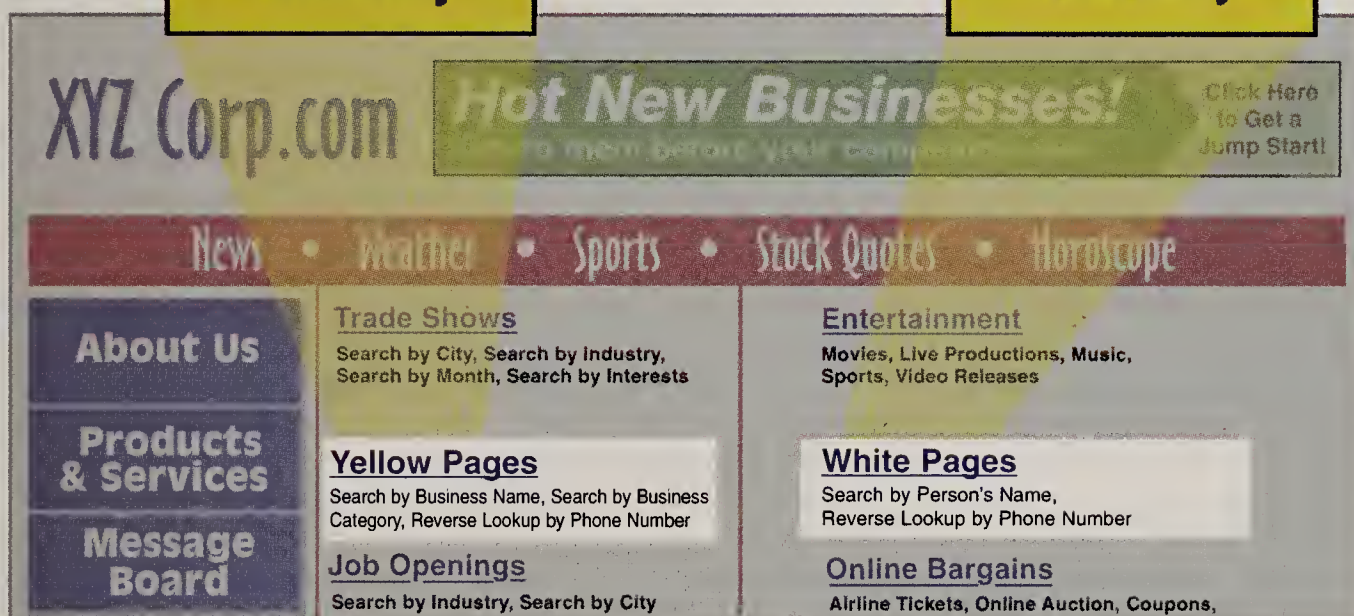
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What Is a VPN?

A VPN IS A VIRTUAL PRIVATE NETWORK. THAT'S not to be confused with a truly private network, where you own the wires all the way from point A to point B, and nobody else can use them. In a VPN, some part of the path from A to B is a public network such as the Internet or the public telephone system. The VPN provider (through judicious use of software) builds a "tunnel" through that public system for your private data traffic.

Huh?

Say point A is the network at Acme Kazoo corporate headquarters in Missoula, Mont., and point B is the company's distribution center in Fuquay-Varina, N.C. One option for connecting the two is to lease a line from point to point. Since the line is private, no one else can use it, and Acme always knows how much bandwidth is available. The problem is that such lines are typically paid for by the mile, so the communications bill can add up pretty quickly regardless of whether Acme is actually using the line or not. A VPN offers a cheaper solution. In a VPN, Acme dials up or leases a private connection from the HQ to a local Internet service provider (ISP) in Missoula and forges a similar link from the distribution center to the ISP's hookup in Fuquay-Varina. Those connections are short, local lines. The Internet—which of course levies no distance-based charges—completes the loop between the two points.

To Acme's users at either end, it appears as if they are both on the same local network (although the con-



nection is perhaps a bit slower).

The Internet is not the only public network that can provide the long-distance part of the VPN connection. Big telcos have all sorts of public bandwidth available, so VPN seekers have some options. For example, frame relay is a common alternative networking technology for VPNs (but frame relay is a whole 'nother Learning Curve).

I like the part about cheap. But what's the catch?

Using Internet and private in the same sentence is a whopper of a contradiction. The corporate world isn't crazy about sending sensitive information over that very public part of a VPN. In practical terms, information passing over the VPN will potentially be routed through several computer systems (servers that are part of the Internet) that are not under the control of the sender. Thus an important part of any VPN is the encryption or protocol that will secure the data stream from prying eyes. (For another look at VPNs, see "The Bargain Hunter's Guide to Global Networking," CIO Section 1, April 1, 1999.)

Also, the Internet is quite flaky in terms of providing consistent, reliable bandwidth and performance. If you lease or buy a private network, that means no one else is using it and all the bandwidth stands ready for your use. Data running over the Internet, on the other hand, can sometimes run into traffic jams as it competes with usage by other people and companies.

—Derek Slater

Buzzwords

Tunneling: Forming a secure, private, end-to-end connection across public links.

IP, Internet protocol and PPP, point-to-point protocol: A protocol is a set of rules that governs the communications between connected computers, ensuring the data gets from one

to the other. IP and PPP are two of the protocols most commonly used in VPNs. IP is obviously the protocol used on the Internet. PPP is typically used on dial-up connections; in other words, if Acme Kazoo reaches its ISP's computer by dialing it up on the local phone line, PPP is likely the protocol that will direct data exchanges over that link.

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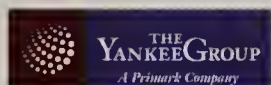
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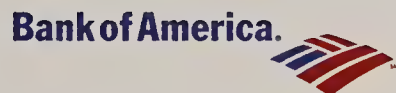
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